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MOTOR AGE

VOLUME XXII CHICAGO, OCTOBER 17, 1912 NUMBER 16

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MOTOR AGE

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DEPARTMENTS

VOL. XXII, No. 16 CHICAGO, OCTOBER 17, 1912 $3.00 PER YEAR

MOTOR AGE

Motoring Gains Foothold in Guatemala

Seven Years Ago First Car Made Its Appearance, Now There Are Ninety—Only 20 Miles of Highways for Motorists

Photograph by Valdeavellano & Co.

ALEMEDA, NEAR ANTIGUA, GUATEMALA COFFEE PICKERS IN FOREGROUND

By Dr. M. O. Badger

GUATEMALA, Oct. 5—Guatemala is an infant in the motor car field, a very young and tender one at that: Seven years ago the motor car was unknown here—the first one to make its debut on the streets of Gualemala was a small single-seated, gasoline runabout of French importation, which the French minister brought into the country, but which was not used until spare parts were ordered separately and assembled here by a local watchmaker, who took great delight in running about the city, and suburbs, exhibiting his curiosity; but soon commenced to arrive small cars and motorcycles until there are now about ninety cars registered and ten not registered, being out of commission; of which about 85 per cent are American, and 30 per cent were second hand cars when bought.

Garages in Guatemala

There are three garages for public hire and service, with about twenty cars of every description, mostly purchased second hand.

There are about seventy private cars, but no organized club or no joint effort has ever been made to improve the roads by motorists.

Guatemala is a city of about 120,000 inhabitants, 5,000 feet above level of the sea and reached by rail from four ports on the Pacific ocean and one on the Atlantic; the port of Livingston not being connected with the capital. In and about the capital there are about 20 miles of roads used daily by motorists besides cart roads leading in three directions to more distant towns—Autigua, Amatillan and Fiscal.

Some Good Cart Roads

There are many miles of fairly good cart roads in the republic, connecting railroad stations with interior cities and large plantations, but unfortunately for motor tourists, these roads are not connected with each other.

Before the railroad was completed from the port of San Jose to the capital, there existed a cart road to convey import merchandise and export coffee, cochineal, etc., but for the last few years it has been

Photograph by Valdeavellano & Co. CART ROAD TO FISCAL, WHICH LOOKS GOOD FOR MOTORING

abandoned and is not now passable for motors.

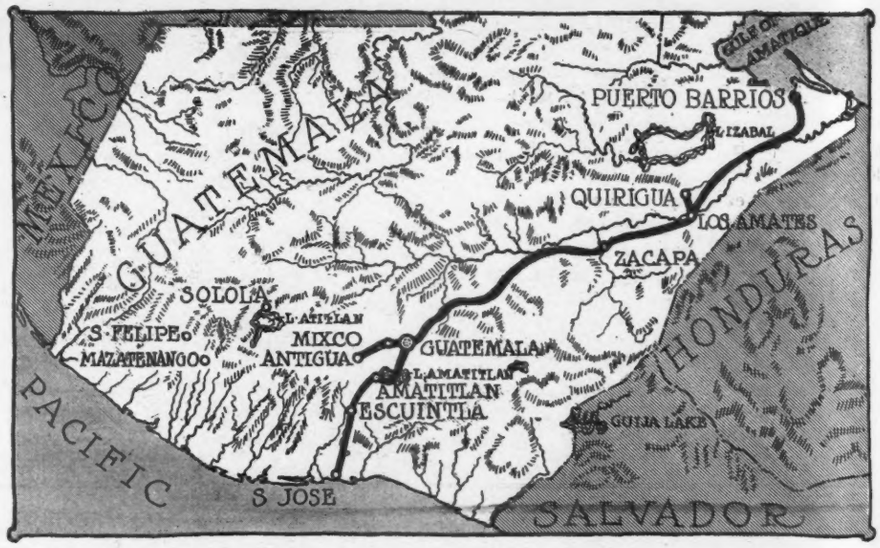
Between the capital and Antigua, a distance of 30 miles, over the mountains, there is a cart road in constant use, and several cars have made the trip with more or less difficulty, passing through the Indian town of Mixco, from where it is a steady climb to San Rafael—6,500 feet elevation—where stage passengers stop to eat and refresh themselves; thence to the summit near San Lucas, and down the slope again to Antigua, where there are good roads, with a distance of some 50 miles in and about the city and many points of interest for the tourist.

Antiqua a Former Capital

Antigua was the original capital of Central America, a beautiful city, set in among the hills, with a most delightful climate and good water supply, but in 1542 it was first ruined by an eruption from the volcano of Agua, water coming down its sides, carrying rocks and sand which completely buried the city and buildings. Most of the inhabitants escaped and founded a new city, 4 miles distant, which was in turn destroyed by earthquakes in 1773, the ruins still remaining and are visited yearly by many tourists, a new city having been built all about the ruins and subjected still to frequent light earthquakes.

Quirigua is near the line of railroad, with a branch line running to a good hotel operated by the United Fruit Co., which has one of its largest banana plantations near by. These are probably the most accessible pre-historic ruins in the world and visited annually by scientists and tourists from every clime.

From Guatemala to Quezaltenango, the



MAP SHOWING GUATEMALA AND RAILROAD CONNECTING TWO OF THE THREE PORTS. SECOND ILLUSTRATION SHOWS INDIANS BRINGING PRODUCE TO MARKET

Photograph by Valdeavellano & Co. FIRST MOTOR CAR IN LA REFORMA, A SUBURB OF GUATEMALA CITY

next largest city in the republic, a distance of 135 miles, there is a cart road, formerly having a stage line between these two cities, but now taken off because of the approximation of railroad connection, leaving a short ride of 33 miles between San Felipe, the railroad terminal, and Quezaltenango, and work of grading that distance is being pushed rapidly to completion for the railroad—45 miles—about 5,000 feet elevation, to be gained in that distance.

Old Stage Road Picturesque

Much of this old stage road would be available to motor tourists, and it passes through a very picturesque country, sometimes reaching an elevation of 7,000 or 8,000 feet where frosts prevail at certain seasons.

From Guatemala to Fiscal, 15 miles, there is another cart road over which motors have been run, also to Amatillan, about 20 miles, on the beautiful lake of the same name, cars have frequently passed.

Most of the roads in the republic would require considerable repairs to make motor touring a pleasure and they could only be used during the dry season, between November and June, because the rains are exceedingly copious, ranging from 120 to 180 inches of fall during 6 months and the roads become at places impassable, and its requires a month or 2 for them to dry out and get repaired after the rains cease to fall in October.

It has been the policy of the present administration of Estrada Cabrera to improve and increase communication and a concerted effort on the part of a motor club, well organized, would, and no doubt will, in time, secure connection of existing roads, as the president is himself interested in motoring, and has his own car in which he travels from the city to his country residence at Las Palmas, San Pedrito.

The reason motoring has never been more popular in this country is because of the short season they can travel comfortably, and the short distances available for travel, on account of bad roads and the high cost of the machines, made more apparent by the high rate of exchange on gold to pay their original cost and freights—the distance from a base of supplies and cost of gasoline; at the present time every gold dollar of American coinage is worth about eighteen of the current money in Guatemala, so that a car which costs $1,000 there, with 25 per cent added for freights, duties, etc., represents $22,500 here, and gasoline at $14 a gallon, makes the motor available only to the very rich; nevertheless, during the last year, 1911, there were imported sixteen cars, of which six were second-hand when bought, four were European and twelve American. For the first 6 months of 1912, eight cars have been imported, five being second-hand and all American cars; the second-hand cars of course cost much less and will the sooner find the dump heap.

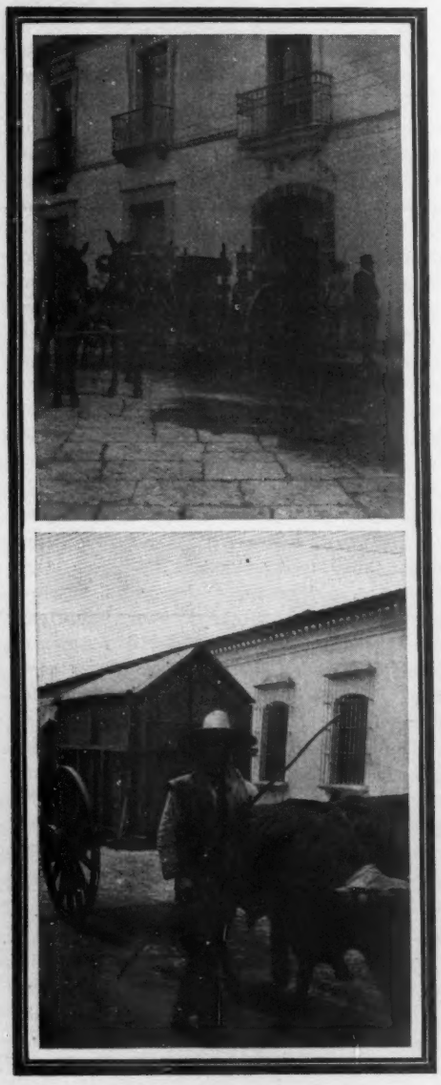
The best and really only car salable here is about a 30-horsepower touring car, strongly built and costing between $1,500 and $2,000, a higher price would not be paid and a lower price would give a car which would not stand the wear and tear and soon become useless.

Pavements in Capital City

The streets of the capital are mostly paved with square block volcanic stones in the principal thoroughfares, and cobble stones in others. There is a slight slope east and west from a summit about the center of the city, and north from its

LOCAL FREIGHT DEPOT AT GUATEMALA RAILROAD STATION

Photograph by Valdeavellano & Co. HALF-WAY HOUSE BETWEEN GUATEMALA AND ANTIGUA



STREET SCENES IN GUATEMALA

southern part, making trucking comparatively easy.

Motor trucks have never been introduced and if their expense of maintenance was not too great, there is no reason why they should not be successful.

Light delivery cars for express, baggage and small freight to and from the railroad stations and delivery wagons from the stores could be used to advantage. Most of this work is now done by mozos or Indian carriers, who support the weight on their backs, suspended from straps across their foreheads, and are able to carry a weight of 200 to 300 pounds.

The delivery of meat from the slaughter house in the outskirts is made in closed carts, drawn by oxen, and from the butcher shops in mule wagons or the house servants take the meat in baskets with other produce.

Ice is delivered by covered mule wagons from three ice factories and beer is also delivered from the brewery in the same manner.

There are light, two-wheeled, single-mule carts for the delivery of small lots of lumber, flour, coffee, case goods, etc., and two-mule, low trucks for heavier cases, machinery, etc.

Custom House Regulations

From the custom house, but one man has privilege of removing goods, and he uses mule carts and trucks, and also has held a franchise to establish a motor-truck service now for a couple of years,

SHOWING BOTH STYLES OF PAVING STONES USED ON CITY STREETS

Photograph by Valdeavellano & Co. PIONEER CARS IN GUATEMALA ON ROAD TO LA REFORMA

but has never attempted their introduction, probably because of their cost.

There are many points of scenic interest in Guatemala, in fact it would be difficult to drop a stone from a balloon railing over this republic and not fall on a spot prevailing in beautiful scenery.

Picturesque Scenery

The Rio Dulce and Lake Izabel and Vera Paz railroad, could not be beaten in Switzerland. The Northern railroad from Puerto Barrios, 195 miles in extension, passing through the great banana plantations of the United Fruit Co., along the valley of the Motagna river for 135 miles, thence turning into the mountains for a rise of 5,000 feet, can be compared with the New York Central up the Hudson, but the scenic beauties after you enter the mountains will not be found in the Catskills nor in the Adirondacks, more like those of the Rocky mountain ranges.

Volcanoes are dotted all over the country, mostly inactive now, some reaching an altitude of 15,000 and 16,000 feet above sea level.

From Guatemala to San Jose on the Pacific ocean it is 75 miles by rail with a drop of 5,000 feet, at one point running along the side of the Agua volcano, with an uninterrupted view across coffee and sugar country to the Pacific ocean.

CHARCOAL VENDERS ENT ERING GUATEMALA CITY

SCENES IN GUATEMALA

New Interests Buy Atlas Engine Plant

Lyons Brothers, Boiler Makers of Wisconsin, Secure Control of Indianapolis Concern and Will Build Silent Knight Motors—Deal Involves Million and Half Dollars—Owners of Sleeve-Valve Patents Not Financially Interested

INDIANAPOLIS, Ind., Oct. 15—The property of the Atlas Engine Works has been sold to the Lyons-Atlas Co., incorporated here today with an authorized capitalization of $500,000. The sale was made this afternoon by Fred C. Gardner, receiver for the Atlas company, with the approval of Judge Clarence Weir of the Marion superior court. It represents a $1,500,000 deal, the purchasers paying over $500,000 in cash and assuming all obligations. No stock is for sale, it is announced, neither are Knight & Kilbourne financially interested.

It is the intention of the new company to continue the manufacture of the Silent Knight motor, for which the Atlas company has had the trade rights in the United States and also the Deisel oil engines. The new company will employ from 2,000 to 3,000 men.

None of the people interested in the new company lives in Indianapolis. James W. Lyons is president; William P. Lyons, vice-president, and George W. Lyons, secretary and treasurer. James W. Lyons and William Lyons were identified with the Atlas company about 20 years ago. All of the stockholders in the new company have been engaged in the manufacturing business in Chicago. The Lyons are boiler makers with a big plant at De Pere, Wis.

The property was bought subject to a deed of trust from the Atlas Engine Works to the Indiana Trust Co., as trustee, but all personal property, merchandise, materials, patent rights, trade marks, accounts, bills receivable, etc., are conveyed outright free of liens.

Under the terms of sale the new owner is to pay $441,000 interest on $1,050,000 worth of bonds, secured by a mortgage deed of trust to the Indiana Trust Co. as trustee; also $105,000, an indebtedness incurred by $150,000 worth of bonds; also $48,187.04, a debt secured by $63,000 of accounts and bills receivable, and $80,000 in cash, to meet receivership expenses and debts incurred during the receivership. The new owner also agrees to pay judgments amounting to $6,700 against the Atlas Engine Works. The common stockholders will receive nothing.

The Atlas Engine Works was one of the oldest manufacturing concerns in the city. It conducted a prosperous business for many years, and at one time made a specialty of steam boilers, the manufacture of which it discontinued a few years ago. More recently it manufactured gasoline motors and Deisel oil engines, and a few months ago was granted the right to manufacture Silent Knight motors for the motor car trade in the United States.

Plans have been made to put the plant into commission at once. Since the appointment of the receiver there have been 400 men employed, but it is the intention to increase this force to 1,000 at once. The new concern has not set any high water mark on the production for the coming year. Its only fear is an inability to get aluminum castings, but it is believed this obstacle will be overcome easily. At the present time it has the parts on hand for the two models which the old Atlas company brought out—the four and the six-cylinder motors, each 4½ by 5½ inch bore and stroke, but in the immediate future it is planned to turn out other models, plans for which are now going through.

J. W. Lyon, the president of the new concern, will be the active head of the company and will move to Indianapolis. As to the other officials nothing has been definitely settled outside of the decision to retain F. H. Baker as general superintendent. Mr. Lyon is a gas engine expert and at one time was connected with Allis-Chalmers. He was instrumental in bringing over from Europe the Nuremberg gas engine, and also has been deeply interested in turbines.

WILLYS-GRAMM MATTER SETTLED

Toledo, O., Oct. 14—The suit brought some 2 months ago by John N. Willys, president of the Willys-Overland Co., against A. L. White and W. T. Agerter, former president and treasurer respectively, of the Gramm Motor Truck Co. of Lima, O., has been settled out of court. Mr. Willys alleged in his complaint that the values shown in the statements under which he purchased the stock of the Gramm Motor Truck Co. from White and Agerter, were not correctly represented, and sued for a rescindment of the purchase contract. The matter has been settled by a readjustment of values which, by his consent to a withdrawal of the suit, are apparently satisfactory to Mr. Willys.

REHABILITATING UNITED MOTORS

New York, Oct. 12—Announcement of the reorganization plan to be used in rehabilitating the United States Motor Co. along the lines of the article published in Motor Age last week has been made and progress toward completing the organization will come next. Under the plan adopted by the creditors the matter will be taken out of the hands of the United States district court as soon as the details have been worked out on a satisfactory basis.

The first step to be accomplished will be to formulate and send out to those interested as creditors and stockholders a legal notice of the agreed plan. Then will follow the call for deposits of the stock certificates and the issuance of new certificates under the schedule as announced.

The financial part of the plan will be carried out under a system of underwriting, the details of which have been completed but not announced.

There has been much talk about the personnel of the new company but no decision has been reached as to who will lead. W. E. Strong, who has acted as chairman of the board since the extension of credit last June, has been asked to remain with the new organization, but in exactly what capacity has not been outlined.

SHOCK ABSORBER SUIT ON

New York, Oct. 15—Motion for a preliminary injunction against Walter H. Ellis, doing business as the Ellis Motor Car Co. of Newark, N. J., was argued on behalf of the Hartford Suspension Co. before the United States district court of New Jersey at Trenton on Monday. Decision was reserved. The suit is one of several now pending, that have been started by the Hartford Suspension Co. to protect its rights under the Truffault patents covering the principles embodied in the Truffault-Hartford shock absorber. The alleged infringement, as outlined in the complaint, consisted in the selling by the Ellis company of shock absorbers made by the Connecticut Shock Absorber Co., which are alleged to contravene the rights of the complainant. The case probably will be brought to issue before the end of the year and may be heard before spring.

MIDGLEY CASE CARRIED UP

New York, Oct. 12—Appealing from the decision of United States Circuit Judge Platt, which was adverse to the patent of Calvin T. Adams covering a certain kind of tire tread in which wire was interwoven to give greater life and non-skidding properties, the Metallic Rubber Tire Co. and the Hartford Rubber Works Co. appeared before the United States circuit court of appeals last week.

The appellant is the assignee of Adams as to the patent in suit which is numbered 609,320 and granted August 16, 1898. The only claim contained in the application is as follows: "The combination with a cushioned vehicle tire, of a tread applied to the entire periphery of a tire, and having metallic wire interwoven with itself, parts of said interwoven wire lying substantially flush with the outer surface of the tread and forming cushioned anti-

slip bearings covering the sides and bottom of the tread.''

The defendant company manufactures a tire known to the trade as the Midgely tread, which consists of embedding a series of wire coils in the rubber before vulcanization. It was claimed that the Midgely tread infringed the Adams' patent.

Judge Platt in the lower court decided that the defendant did not infringe, and the case went up in due order.

In the present hearing, the complainant's attorneys, Alfred Wilkinson and J. H. Roney, contend that the opinion of the court below was based upon an erroneous view of the prior art, particularly outlining the alleged worthlessness of several old British patents and holding that the terms of the patent were sufficiently broad to cover the Midgely construction.

The defendant's attorneys, F. W. Vaill and Livingston Gifford, argue for an affirmation of Judge Platt on the grounds that there has been no infringement because the wire is embedded in the Midgely tire and the Adams' patent applies only to interwoven wire.

As additional defenses it is alleged that the Adams' patent is completely anticipated by the Phillips' British patent of 1893; that in view of the prior art there is no invention; that the Adams' patent has been abandoned within the purview of the statute and that the claim is inequitable. The case apparently turns on the interpretation of the term interwoven as contained in the claim in suit.

ST. LOUIS SHOW A SUCCESS

St. Louis, Mo., Oct. 12—With a record attendance reaching a grand total of approximately 70,000, the most successful show ever held in this city closed tonight. It was given by the St. Louis Automobile Manufacturers' and Dealers' Association. The million-dollar display of pleasure cars, trucks and commercial vehicles, accessories and tires attracted visitors from all parts of the middle west.

The 1912 show was the largest ever held in St. Louis and had a greater attendance than any previous show. Some 300 1913 models of seventy makes of pleasure cars and more than sixty models of commercial vehicles were displayed.

As a business-getter for the exhibitors the show has been unsurpassed. The public repaid the exhibitors for their expenditure of money, time and effort. It is estimated that 200 cars were sold outright and the names of 3,500 prospects now adorn the pages of the dealers' lists.

Out-of-town manufacturers and factory representatives were in attendance in larger numbers than ever before and all were unanimous in their praise of the show.

AFFAIRS OF THE OHIO COMPANY

Cincinnati, O., Oct. 14—Apparently there is a sharp division among the creditors of the Ohio Motor Car Co., which is now in the court of common pleas under insolvency proceedings. One committee of the creditors has issued a statement recommending that the plant be sold on the block as quickly as possible and urging the creditors to bring pressure to bear to have the whole manufacturing force discharged instanter. This report is signed by J. S. Monroe, E. J. Hess and C. M. Stadelman.

The other report takes a rosier view of the matter. It denies the accuracy and good intent of the other committee and states that a careful appraisement having been made, it was found that the plant is worth about $200,000, not including bills and accounts receivable, good will and stock holdings in other corporations. That figure is over $20,000 greater than the total liabilities, according to the committee.

The appraisement referred to above was made by William J. Peck, August A. Geis and C. C. Evans, all engineers. The committee urges the creditors not to take any action until thoroughly informed of the facts. This report is signed by C. F. Pratt and A. E. Schafer. In the meantime the receiver, E. G. Schultz, has completed and sold one car and several Breeze buggies.

CREATING INDUSTRIAL COLONY

Lomax, Ill., Oct. 12—Plans have just been made public for an industrial university and manufacturing center that is projected for this city by the Lomax Town Co. The purpose of this organization is to build up a technical, scientific and industrial colony at Lomax to encourage individual industrial enterprise, and the development and trainihg of American technicians. The plan as outlined embraces three principal divisions of the activity of the organization, including an industrial training and engineering college, an inventor's bureau and nursery, and a coöperative manufacturing district, all of which will be intimately associated, and all on substantially one campus.

OFFER FOR BANKRUPT PLANT

Newark, N. J., Oct. 14—The trustee acting in the matter of the bankruptcy of the Newark Automobile Mfg. Co. has reported to the United States district court that he has received an offer to purchase the factory building and real estate of the embarrassed company and also an offer to rent the same until December 1, 1913. A meeting of the creditors will be held October 21 to consider the offers.

S. A. E.'S 1913 SLATE

New York, Oct. 12—The following nominations have been made for the various offices in the Society of Automobile Engineers: For president, Howard Marmon; vice-presidents, Russell Huff and John G. Perrin; treasurer, Herman F. Cuntz; members of council, Joseph A. Anglada, Eugene F. Russell and Harold L. Pope.

The nominations were made by the regularly appointed committee on nominations and the election will be by mail vote in which all persons of either of the member grades may participate. The vote will not be announced until just prior to the annual meeting of the society during the second week of the New York show, about the middle of January. No exact date has been set.

The present roster of officers and the council is as follows: President, H. W. Alden; vice-president, Harold L. Pope; treasurer, Hermann F. Cuntz; chairman finance committee, H. M. Swetland; secretary and general manager, Coker F. Clarkson. Council, Henry May, Charles Ethan Davis, Howard Marmon, Charles B. Whittlesey, Arthur B. Cumner, Andrew L. Riker, H. W. Alden, Harold L. Pope, Hermann F. Cuntz, Howard E. Coffin and Henry Souther.

SUCCEEDS KELLY-SPRINGFIELD

Columbus, O., Oct. 14—Papers were filed with the secretary of state of Ohio recently, incorporating the Kelly-Springfield Motor Truck Co. of Springfield, O., with an authorized capital of $2,500,000. The new company will take over the plant and assets of the Kelly Motor Truck Co. of Springfield, which formerly was the Oscar Lear Motor Car Co. The capital of the former corporation was $450,000. The principal stockholders in the new concern are E. S. Kelly and J. S. Crowell, both of Springfield.

The object of the new truck concern, which is being backed by Emerson McMillen & Co., of New York, is to furnish facilities for increasing the plant of the company, which had an output of 1,200 trucks during the present year.

CONDITION OF RUBBER MARKET

New York, Oct. 15—Crude rubber has worked back to a basis of $1.10 a pound for up-river fine with little or no apparent reason for the upward trend. Consumers have not been aggressive in bidding for the firmly held but liberal supply and the trading on the advance has been somewhat smaller than was noted last week. On the other hand the sellers have not been liberal in conceding anything in order to make trades. Imports in New York are well up to the average. While pale crepe from the plantations remains steady at the former figures, approximating $1.16½ a pound, bales and sheets have yielded about 1 cent a pound.

GENERAL VEHICLE CHANGES

New York, Oct. 15—C. W. Squires, who has been assistant to the president of the General Vehicle Co., has been promoted to the position of sales manager. G. W. Wesley has moved up to vice-president in place of R. M. Lloyd. J. R. C. Armstrong heads the electrical engineering division and H. G. McComb has been named as head of the gasoline engineering division.

DYER LICENSE FOR CRAWFORD

New York, Oct. 14—The Crawford Automobile Co., Hagerstown, Md., has been granted a general manufacturing license under the Dyer transmission patents. The terms of the license are the same as those previously granted, namely: ⅛ per cent of the retail list price.

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Service to Buyer

THE keynote of service to the car owner was struck at the Indianapolis salesmens' convention last week. For the first time in their selling careers many of the salesmen realized that a boosting owner is the biggest active selling force that any dealer can possess.

UP to the present many salesmen—dealers are meant—went on the assumption that when the car was delivered the work was done. This is short-sighted salesmanship. Keep the buyer satisfied is the great aim. Give him service and he will be satisfied. Giving him service need not mean giving him a new clutch bearing after he has burned one out due to sheer carelessness; giving service does not mean selling gasoline at 2 cents a gallon under the price it can be bought at other places; but service means starting the owner out right with his machine, and giving him that rational advice and attention which his case warrants.

MORE repeat orders in pleasure cars are lost by poor attention by the dealer to the car owner than by faults in the car. Hundreds of cases are on record where the car owner liked the car but refused to have anything to do with the dealer. Such a dealer has to make a new sale every time he disposes of a car; his old customers rarely come back and place a repeat order. They do not come back to tell why, they simply go their way, preferring to do business with the dealer who gives them the service they want.

WHAT is the service they want? It is difficult to answer this question. The answer depends on the individuals who own the cars. Where the owner drives the car, he wants that service which will make him a competent driver, capable of getting the best possible out of his car. He wants to drive his car as it ought to be driven. He wants to give it that attention that it ought to be given. In a word, he wants to know how to handle and care for it rationally.

OVER half of the cars are not driven properly by the new purchaser. He gets his first car and has to become familiar with all of the many whims of it. According to many salesmen, nothing is wrong with it and, more, nothing can get wrong with it. It will never carbon in the cylinders; it will go 55 miles per hour on high; it will run 1,000 miles on a gallon of oil; it will make 25 miles per gallon of gasoline, and you "hardly ever have to bother with the other parts."

OFTEN the buyer takes the salesman literally. He does not put any lubricant into the front wheel hubs and after running 5,000 miles he finds some bearing trouble. He is told he should have oiled the bearings every 1,000 miles. The same salesman tells him this who volunteered the information at the time of sale that it did not require lubricant. He is told by the salesman to turn certain grease cups up every 2 weeks, but the repair man says they should be turned up every week and in heavy running every 100 miles.

THE dealer with salesmen giving such advice is going to lose out in the selling business. The merits of his product may carry him for a time, in spite of his own poor organization and poor methods; but the lane will turn and the dealer giving a little cheap, rational service in the way of commonsense advice will win out.

SERVICE to the car owner means giving him rational advice when he asks for it. It means when he takes his car in to have it looked over that those who do the work are competent to do it, so that the car is not rendered worse instead of better. Service means salesmen who know what advice to give on the operation and care of a car when they are making a sale, instead of salesmen who are entirely ignorant of the operation of the machine and give the buyer false impressions.

THE repairman who, after making a simple adjustment or repair, uses every effort to conceal from the inquiring owner the real nature of what he did is a poor investment to any dealer. The car owner who wishes to know the whys and wherefores is not a parasite but a rational human being. He wishes to know when his car is operating well; he wishes to know when it is in order that he may properly operate the machine, which acts to his own advantage and also to the reputation of the machine. The dealer should constantly keep the pleased owner in mind.

Sane Road Racing

THE coroner's verdict following the lamentable accidents on the Milwaukee road race course has, for the first time, turned the attention of the public to road requisites for race circuits. The verdict suggests a definite width of course, a minimum road arch or crown, a road built for a period of 6 months or more, and a road with banked turns.

SOME of these suggestions are good; some bad. Requiring a certain road width, to-wit, 25 feet, is commendable, but that in itself will not insure freedom from accidents. Having the roadbed well hardened is essential and where the edges are not so the use of danger flags is imperative. The crowned road is one of the dangerous features of the road race. High speeds are dangerous on such roads.

THE banked turn is often more of a danger than a safety factor. The flat right-angled turn is one of the safe factors in racing. It cannot be taken at a dangerous pace. If the brakes are adequate, the turn has not any dangers. To insist on banked turns is retrogression.

THE mechanic is the vital factor in road racing. His duty is to look to the rear—to keep looking to the rear in order to warn the driver of cars that are trying to overtake them. If the mechanic does not do this, he is creating one of the greatest dangers in road racing. Many accidents have been caused by failure of the mechanic to carry out this part of his instructions.

Massachusetts New England's Leader

Bay State Expects to Show 50,000 Cars Registered This Year

BOSTON, Mass., Oct. 12—Massachusetts, which in past years, had more cars registered each year than all five other New England states combined, bids fair to continue its record when 1912 ends, for already there is every indication that the figures will show close to 50,000 cars on the list this year. With 9 months passed and 3 more to go there have been registered by the highway commission 47,431 cars, while the full year of 1911 had 36,796 cars registered, so that the increase to date over last year is about 33 per cent. In the amount of revenue from the motor industry the Bay State is reaping a harvest again this year.

The state has received now $583,359 this year, while the total for 1911 was $466,199, or $177,160 less than all of last year. That the figures will go above $600,000 seems certain. This is a remarkable growth in a decade for 10 years ago the state received from motorists but $17,684. Here are the figures showing the amount of money received annually during these years:

The figures for registrations, operators, dealers, etc., show an increase all along the line, and this is particularly true of the motorists who register in the state for a couple of months just to use our roads, there being more than 100 of them this year. The following figures give the entire year of 1911 and up to October 1 of 1912:

1903	$ 17,684.00
1904	19,162.00
1905	24,490.50
1906	33,085.50
1907	92,096.50
1908	121,488.50
1909	169,973.54
1910	374,038.25
1911	466,199.75
*1912	583,359.00

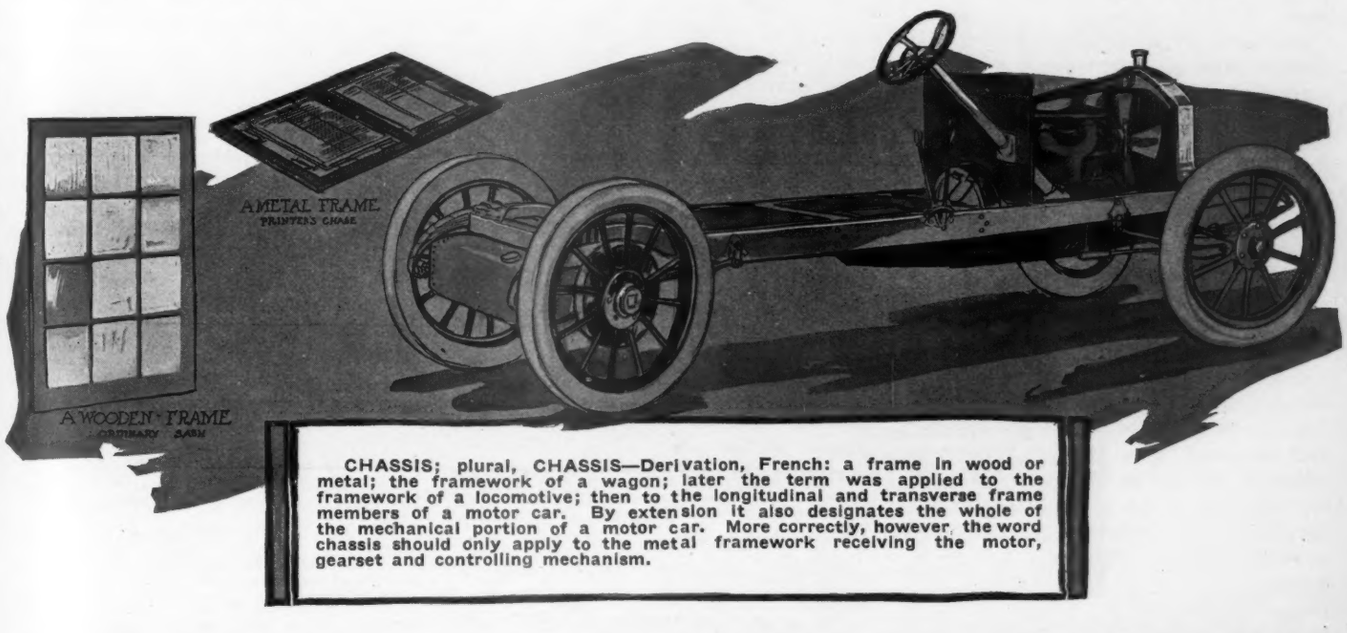
*To October 1

	1911, entire year.	1912, To Oct. 1
Motor cars	$ 36,796	$ 47,431
Motor cycles	3,712	4,720
Manufacturers or dealers.	829	1,064
Manufacturers or dealers motor cycles	13	22
Operators	10,232	12,988
Operator renewals	24,842	30,495
Chauffeurs	3,695	5,348
Chauffeur renewals	9,449	11,625
Examinations	5,386	5,512
Total fees	466,199	583,359

CALIFORNIA'S TAG RECEIPTS

Los Angeles, Cal., Oct. 12—Rapid growth of the motor car business in California is shown by Secretary of State Jordan's report to the effect that the receipts of the motor vehicles in the department for licenses during the last 2 years were more than double those of previous biennial periods. The receipts for the biennial period 1909-1910 were $51,960.50, while the receipts for biennial period ending June 30, 1912, were $105,157.50. The increase is more than 100 per cent. The prominent part played by California in the good roads movement undoubtedly has had a lot to do with the increase in motoring interest.

Antecedents of Words Now Part of Motor Phraseology



CHASSIS; plural, CHASSIS—Derivation, French: a frame in wood or metal; the framework of a wagon; later the term was applied to the framework of a locomotive; then to the longitudinal and transverse frame members of a motor car. By extension it also designates the whole of the mechanical portion of a motor car. More correctly, however, the word chassis should only apply to the metal framework receiving the motor, gearset and controlling mechanism.

Coming Motor Events

October 21—Chicago Motor Club reliability.
October 26—Los Angeles to Phoenix road race.
November 2-3—Splash guard competition; Versailles.
November 6—Track meet; Shreveport Automobile Club, Shreveport, La.

*Sanctioned by A. A. A.

SHOWS.

October 2-12—Fire show, Madison Square Garden, New York.
October 7-12—St. Louis show.
November 8-16—Olympic show; overflow November 22-30 Agricultural Hall.
December 7-22—Paris salon.
January 6-11, 1913—Cleveland show.
January 4-11—Montreal show.
January 11-18—New York pleasure car show; Automobile Board of Trade; Madison Square Garden and Grand Central Palace.
January 11-22—Brussels, Belgium, show, Centenary Palace.
January 20-25—New York truck show; Automobile Board of Trade; Grand Central Palace and Madison Square Garden.
January 20-25—Philadelphia show.
January 25-February 1—Montreal, Canada, show.
January 27-February 1—Detroit show.
February 1-March 1—Pleasure car and truck show, Cincinnati, O.
February 1-8—Chicago show.
February 10-15—Chicago Truck show.
February 10-15—Minneapolis show.
February 17-22—Kansas City show.
February 24-March 1—Show at Omaha, Neb.
March 3-8—Pittsburgh show.
March 8-15—Boston pleasure car show.
March 17-22—Buffalo show.
March 19-29—Boston truck show.
March 24-29—Indianapolis show.

Cherry Circle Motorists Win Match

Team Contest Between Chicago Athletic Association and Chicago Automobile Club Attracts Twenty Contestants Who Visit George Ade, the Playwright

CHICAGO, Oct. 14—Winding up the 1912 series of team matches, the Chicago Athletic Association's representatives decisively defeated the Chicago Automobile Club in the fall run for the Allen S. Ray and Carleton White trophies, making the sixth victory for the Cherry Circle in the seven times the two clubs have clashed. Nine of the C. A. A.'s ten cars were perfect, while the C. A. C. had four of its ten penalized. A new scheme was tried in the run of Saturday—that of giving 5 points credit to a team for each perfect score it turned in. As the C. A. A. only had 13 points against it and was credited with 45 for nine perfect scores it won the match with a mark of 32 plus. On the other side, the C. A. C. had 263 points against it and only 30 points credit, so its score was 233 minus. Because of having the best total the C. A. A. won the Ray trophy and because of having the greater number of perfect scores it added the White cup to its collection.

The run was a 1-day affair instead of the usual 2, the noon control being located at the Hazelden farm of George Ade, the playwright, at Brook, Ind., a distance of 90 miles. Threatening weather the night before, when it rained hard, kept down the size of the field and so only twenty cars went to the tape. But those who did drive had a most enjoyable outing, for the sun came out, the roads dried up and it was a joy ride both ways. At Ade's the Daughters of Ruth served the luncheon and at the finish the losing team paid for the dinner at the South Shore Country Club.

Penalties exacted were mostly for stalled motors, but in the case of A. M. Robbins, who got the maximum penalty of 250 points, broken shock absorbers brought on penalization that put the C. A. C. out of the running completely. It took Robbins so long to complete the repairs on the accessories that he was just reaching the noon control as the last car pulled out on the return journey. The report of the judges was as follows:

CHICAGO ATHLETIC ASSOCIATION

No.	Driver and Car	Plus	Minus
2	C. T. Knisely, Diamond T	5	0
4	W. F. Grower, Diamond T	5	0
6	S. E. Hibben, Packard	5	0
8	H. C. Knisely, Premier	5	0
10	A. Ortmeyer, National	5	0
12	S. W. Hamm, Cole	5	0
14	W. C. Thorne, American	5	0
18	J. W. Hayden, Nyberg	0	13
20	A. J. Banta, Locomobile	5	0
22	L. T. Jacques, Peerless	5	0
	Total	45+	13—

Grand total, 32 plus.

CHICAGO AUTOMOBILE CLUB

No.	Car and Driver	Plus	Minus
1	Morton H. Luce, Velie	5	0
3	H. A. Ford, Premier	5	0
5	G. F. Ballou, Apperson	5	0
7	A. M. Robbins, Abbott-Detroit	0	250
9	F. E. Mann, Locomobile	5	0
11	Frank X. Mudd, Lozier	5	0
13	H. P. Branstetter, Kisselkar	0	3
15	W. R. Roberts, Cadillac	0	7
17	F. A. Yard, Inter-State	0	3
25	C. G. Sinsabaugh, Premier	5	0
	Total	30+	263—

Grand total, 233 minus.

Each C. A. A. driver with a perfect score gets a miniature White cup given by Fred Grower, while each C. A. C. pilot is to get a small Ray cup from Frank Mudd.

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events of the meet which were witnessed by 30,000 people. Summary:

Five miles, 231-300 class—Nikrent, Case, won; Ulbrecht, White Streak, second; time, 5:34¾.

Five miles, 301-450 class—Will Endicott, Case Tornado, won; Madden, Inter-State, second; Luttrell, Stutz, third; time, 5:10.

One mile against time—Disbrow, Simplex; time, :51⅕.

Five miles, class E handicap, 300 cubic inches and under—Ulbrecht, White Streak, won; Nikrent, Case, second; Monckmier, Staver, third; Parker, Falcar, fourth; time, 5:13⅕.

Three miles, 301 cubic inches and over—Disbrow, Simplex Zip, won; Endicott, Case Tornado, second; Kilpatrick, Hotchkiss, third; Luttrell, Stutz, fourth; time, 2:56⅘.

Ten miles—Illinois club championship race, under 601 cubic inches—Nikrent, Case, won; Luttrell, Stutz, second; Parker, Falcar, third; time, 10:28⅕.

Two miles, against time—Disbrow, Jay-Eye-See; time, 1:47⅗. Previous record for track, 1:47⅘.

Five miles—Disbrow, Simplex Zip, won; Ulbrecht, White Streak, second; Endicott, Case Tornado, third; Kilpatrick, Hotchkiss, fourth; time, 4:36⅘.

LITTLE GLIDDEN STARTS

Des Moines, Ia., Oct. 13—After three postponements the third annual Little Glidden tour of the Iowa Automobile Association left Des Moines early this morning for an 830-mile trip over Iowa. Five days will be consumed on the run and a complete circuit of the state will be made. The run is sanctioned by the American Automobile Association and C. A. Kneedler, of Sioux City, representative of that body, will referee the reliability run. Non-stock cars only are entered.

Ten cars left Des Moines and while these are the only ones actually entered in the contest there will be hundreds in the run during its course around the state. Never before has so much interest been taken in the Iowa reliability run. It will well serve its purpose, that of reflecting the great interest in good roads work in Iowa.

The run left Des Moines over the River-to-River road, but a greater part of the trip to Council Bluffs, which has the Tuesday night control, was made over the White Pole road. Wednesday the tour followed the Missouri river to Sioux City for the second night control. The third day out the tour used the Hawkeye highway between Sioux City and Ft. Dodge. Cedar Rapids is the night control for the fourth day, the noon stop being at Waterloo. The final day's run is back to Des Moines by way of Iowa City and Washington, following the I. O. A. short line and the east branch of the White Pole road.

GLIDDEN STARTS SOUTH

Detroit, Mich., Oct. 13—Charles J. Glidden was given a warm reception and send-off yesterday when he started from here on his 1,700-mile trip over the lakes to the gulf route in his Maxwell 40, the route selected for the national tour, which was abandoned. Mr. Glidden was given a dinner Saturday night by the national tour start committee which planned the Glidden tour reception. Homer Warren, postmaster and president of the Board of Commerce of Detroit, was toastmaster.

MEXICO ENCOURAGES TOURING

Laredo, Tex., Oct. 12—It is expected that the new ruling by the United States credit department relating to motor car tourists crossing the Mexican and Canadian borders, the effect of which is that there shall be no duty charged on the cars, the only requirement being that the machines must be inspected, will result in a great increase in this class of travel into Mexico through the Laredo and Eagle Pass gateway as soon as the political disturbances in that country are settled. The new ruling fixes 6 months as the time limit set on this free return of the cars into the United States. During the last few years many motor car enthusiasts from the north and east have found enjoyment in bringing their cars to San Antonio and spending a part of the winter driving over the good roads of that section. Much work has been done during the last several months in the highway system of southwest Texas and the construction of a motor road between San Antonio and Laredo is well advanced.

BETTER ROADS THEIR CRY

Indianapolis, Ind., Oct. 14—Committees representing the various commercial bodies of the city have arranged for a meeting to be known as the Indiana better roads convention to be held in this city December 11 to 13, inclusive. It is hoped to bring a road machinery exhibit that will be shown in Cincinnati during the previous week to the city for the convention.

The meeting is to be devoted largely to a discussion of proposed bills to be brought before the Indiana legislature next year. It is thought one bill will be outlined creating a state highway commission and that another bill that will be proposed will provide an annual tax.

Milwaukee Faces a Big Race Deficit

Dealers Estimate Their Loss Will Be from $25,000 to $35,000 —Move on Foot to Organize a Stock Corporation to Handle Classics in 1913—Bills Will Be Paid

MILWAUKEE, Wis., Oct. 15—The early estimates of the probable deficit which the Milwaukee Automobile Dealers' Association faces as the result of its conduct of the road racing classics in Milwaukee on October 2, 3 and 5, have now been increased from $25,000 to $35,000. It will be another week, at least, before Manager Bart J. Ruddle is able to lay an exact statement of the financial outcome of the big speed carnival before the association, but it is safe to say that the figure of $35,000 will remain as the minimum amount of the deficit.

Sentiment in regard to the continuation of race promotion by the M. A. D. A. is sharply divided among the members of the association, twenty-two in number. The feeling is general among the members that the association be relieved of the financial burden and active management of future race ventures and that it should properly be made a civic proposition rather than the private enterprise it actually was this year.

The lines are now being laid by progressive men of Milwaukee for the organization of a stock corporation, of which the M. A. D. A. as an association, or its members as individual stockholders, will be a part. Nothing will be divulged by the moving spirits in the stock corporation until the 1912 affair is entirely settled up and a final test of sentiment can be had from the M. A. D. A.

It is known, however, that the plans contemplate the formation of a corporation under the laws of the state of Wisconsin, with an authorized capital of probably $100,000, the principal and prime object of which shall be to promote and conduct the road races on the Wauwatosa course in Milwaukee county in 1913; the reconstruction of the 7.882-mile course; the donation of $25,000 in cash purses, etc. It is likely that the stock issue will be all common, divided into 1,000 shares of $100 par value each, and the number of shares which may be held by any one interest so restricted that the organization shall not become a closed corporation and make the participation general among public-spirited and civically enterprising business men of Milwaukee. Under a $100,000 capitalization there would be no possibility of a deficit, but even were this possible the responsibility would rest solely upon the corporation.

It is not known what measures the M. A. D. A. will take to meet the deficit of $35,000 or more incurred this year. An assessment of $1,500 upon each of the twenty-two members of the corporation is looked upon as the most feasible method, although it will mean a hardship to some of the smaller members. It is believed that some of the big interests of the city of Milwaukee, which profited most from the holding of the races here will come forward to help out in proportion to their gain.

It is announced positively that all accounts will be paid at once and that no creditor shall suffer by reason of the deficit. The $20,500 hung up in purses was paid promptly to the winners immediately after the last race. Salaries of officials also have been liquidated.

That there was something radically wrong in the system of collecting admissions on the ground seems to be proven by the well-founded statement that on grand prix day, Saturday, October 5, with more than 125,000 persons on the course, the actual receipts at the box offices on the ground were only $9,900.

It is stated that the farmers reaped no small harvest of loose change by taking cars and individuals into their property at a small charge per head. There seemed to be no provision for collecting admissions or parking space fees on any point on the course save the Burleigh street home stretch. There were hundreds of persons in the grandstands who wore no admission tags.

DE PALMA CONVALESCING

Milwaukee, Wis., Oct. 12—Ralph de Palma, winner of the Vanderbilt cup, will be dismissed from Trinity hospital by the end of this week, according to Dr. M. L. Henderson, chief of the medical staff for the races, and attending surgeon to the famous Italian pilot. The indomitable courage of the great driver, his fine physical condition and iron constitution enabled him to escape an almost certain death. On the day his physician pronounced him out of danger, visitors were admitted to his ward, and in answer to the question, "How do you feel?" he said:

"Fine! I ought to be out shoveling coal or doing some real work."

De Palma refuses to talk at length on the cause of the accident near the finish of the last lap of the leaders in the grand prix race. He is inclined to blame Caleb Bragg's mechanician for not watching the rear and signalling to his mate. De Palma displayed not the least of unkindly feeling toward Bragg, the winner, simply blaming the mechanician, who did not observe the rules, he claims.

"This accident will not keep me out of the racing game," de Palma said in a private interview with Mayor G. A. Bading, who, with hundreds of other prominent Milwaukee people have taken a deep interest in the little pilot's welfare and have showered him with flowers and keepsakes. "I have had accidents before and suppose I will have some more. It is a fascinating game and the call of the race is too strong for anyone who has experienced the sensations of racing to quit."

Bragg, the winner, caused quite a turmoil in Milwaukee last week by starting a tirade against everybody and everything. It seems that when he came to pay his bill at the garage where he kept his Metallurgique touring car he was astonished with a charge of $4 per day for 30 days, or $120. This charge was for washing, polishing and storage. Bragg stated that he never had been charged more than $2.50 per day anywhere in the United States and expressed the belief that he was held up. He visited the mayor in his office at the city hall the same day and after expressing his pleasure over the royal treatment he had been accorded by Milwaukeeans at large, he took a rap at the promoters, whose sole object, he declared, was to grab the almighty dollar.

In his interview with Mayor Bading Bragg said that from the standpoint of sport the Milwaukee carnival was not a success, because the management was in the hands of men of no experience, who had a commercial rather than a sportsmanlike motive.

BIG MEET AT FRESNO

Fresno, Cal., Oct. 12—The Stutz car driven by Earl Cooper won all the honors at the meet last Saturday. It captured two of the three events, broke the track record of :55⅕ made several years ago by Barney Oldfield in an exhibition event. The Stutz time was :55. Eleven thousand people witnessed the races, but owing to the one sided nature of the events there was little enthusiasm. Summary:

Five miles, 231-300 class—G. L. Weathers, Mercer, won; Lewis Bravel, Warren, second; time, 5:15½.

Ten miles, under 450 inches—Earl Cooper, Stutz, won; Sulprizio Denta, Buick, second; G. L. Weathers, Mercer, third; Lewis Bravel, Warren, fourth; time, 9.57½.

Twenty-five miles, free-for-all—Earl Cooper, Stutz, won; Earl DeVore, National, second; Warren, Buick and Mercer, started but did not finish; time, 24:53½.

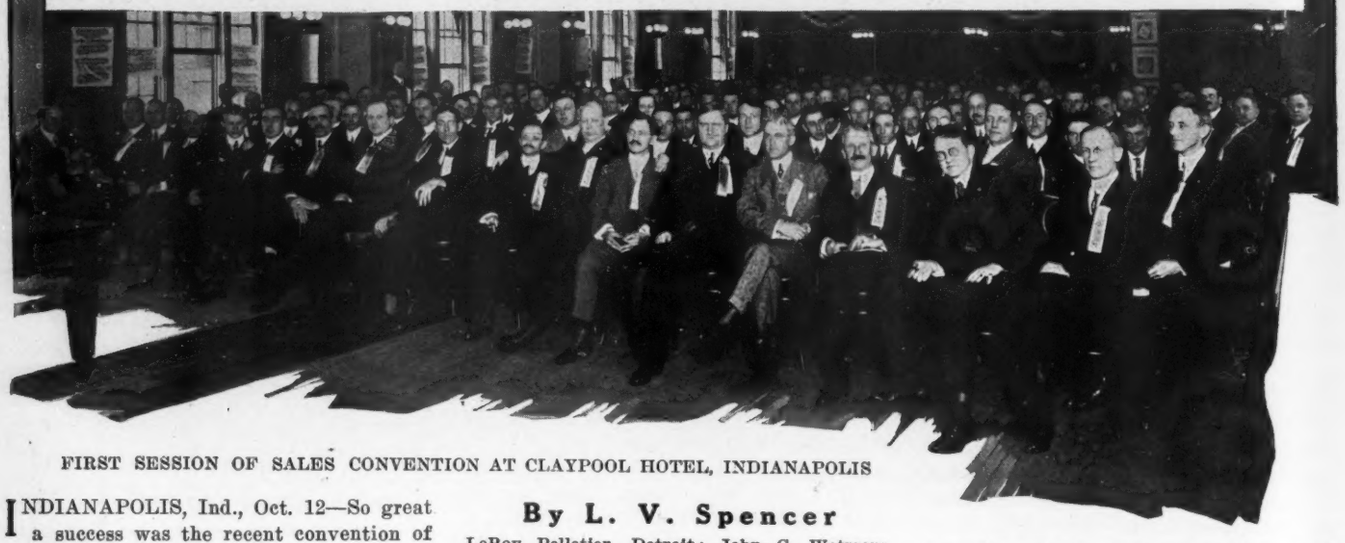
Exhibition to break track record of :55⅕ by Earl Cooper, Stutz, :55; G. L. Weathers, Mercer, :59.

RACING AT SPRINGFIELD

Springfield, Ill., Oct. 12—Two local mile track records were broken here today at the motor races held in connection with the state fair in progress this week. Louis Disbrow, driving the Simplex Zip, lowered by 2 seconds the track record of 53⅕ seconds for the mile held by Barney Oldfield in the Blitzen Benz. Disbrow also lowered Kirscher's former record for 2 miles on this track. These were two of the nine

Detroit Gets Next Sales Convention

Permanent Organization of the General Automobile Sales Association Perfected at Indianapolis—Committee of Fourteen Appointed to Handle Next Year's Meeting—Manufacturers and and Dealers Listen to Speeches Made by Experts in Making Cars and Selling Them



FIRST SESSION OF SALES CONVENTION AT CLAYPOOL HOTEL, INDIANAPOLIS

INDIANAPOLIS, Ind., Oct. 12—So great a success was the recent convention of the motor industry of this country, which was held in this city on Tuesday and Wednesday of last week, that a permanent organization has been perfected, a name given it and a decision made to hold the 1913 session in Detroit.

The General Automobile Sales Association is the title selected for the new organization and the 1913 convention will be handled by a committee consisting of J. J. Cole, Indianapolis; Homer McKee, Indianapolis; H. M. Swetland, New York; E. Le Roy Pelletier, Detroit; John C. Wetmore, New York; Hugh Chalmers, Detroit; Roy Chapin, Detroit; William Boyd, Chicago; Carl Page, New York; C. B. Means, Cleveland; J. L. Mahin, Chicago; H. L. Stratton, New York; John Guy Monihan, Indianapolis, and F. B. Stearns, Cleveland, appointed in a resolution introduced by Francis L. Wurzberg, general manager of the Class Journal Co., following the burst of enthusiasm over the success of the Indianapolis affair. The resolution was as follows:

Text of Resolution

Whereas, We, the charter members of this, the first motor car retail convention, are of the opinion that an organized national movement in behalf of the retail dealers will be of great benefit to the industry; be it

Resolved, That we hereby constitute ourselves the nucleus of such an organization and pledge ourselves to its perpetuation; and be it

Resolved, That the next meeting be held in Detroit in 1913 at a date to be later determined; and be it

Resolved, That the following men be appointed as a committee in charge to serve for one year:

J. J. Cole, Indianapolis; Homer McKee, Indianapolis; H. M. Swetland, New York; E. LeRoy Pelletier, Detroit; John C. Wetmore, New York; Hugh Chalmers, Detroit; Ray Chapin, Detroit; William Boyd, Chicago; Carl Page, New York; C. B. Means, Cleveland; J. L. Mahin, Chicago; H. L. Stratton, New York; John Guy Monihan, Indianapolis, and F. B. Stearns, Cleveland.

By L. V. Spencer

Indianapolis Affair a Success

The convention passed into history hallmarked a big success. The attendance for an initial venture was surprisingly large, bringing out not only many of the leaders of the industry in a manufacturing way but also attracting motor car agents and salesmen and advertising men from all sections of the country. Originally the idea of Homer McKee, of the Cole company, and put into execution through the work of J. J. Cole, president of the Cole company, this convention caught the industry by storm and brought about a unity of action among the tradesmen that cannot help but be beneficial. The first day of the session was devoted to a business meeting at the Claypool, a visit to the speedway and was followed in the evening by banquets. Wednesday there was more speech-making, in which all branches of the industry was represented.

The first session of the convention took place on Tuesday afternoon following a luncheon tendered to the visitors by the Mahin Advertising Co. of Chicago. The morning of the first day was devoted to registration at the headquarters at the Claypool hotel. After the afternoon meeting, a speedway dinner in twelve laps, with W. D. Nesbit the official starter, wound up the scheduled affairs of the day.

On Wednesday morning, the visitors again gathered in the Claypool's auditorium, when more potential talk was delivered. At noon on Wednesday, special interurban cars carried the convention to the speedway, the pride of Indianapolis. Here a luncheon was served, while Gil Anderson drove an exhibition race in his Stutz in much the same style as when he captured fourth money in the grand prix race at Milwaukee recently. On returning to the city, the final session of the convention was held. About 400 attended the gathering from all parts of the country, and from the dominion.

Wednesday's Proceedings

On Wednesday evening, the Cole Motor Car Co. entertained its dealers, representatives and invited guests at a banquet at the Columbia Club.

Wednesday's first speaker was J. G. Jones of the Alexander Hamilton Institute, New York. His topic was "Headwork in Salesmanship," and he gave some good advice for the dealer and for his salesmen. He stated that since manufacturers are making motor cars along scientific lines, salesmen should sell them along the same lines. He spoke in favor of the boosting spirit, and tabooed the knocker. He dwelt at length upon the qualifications which make for a good salesman, giving the following fourteen: Natural qualifications, prime condition, personality, ambition, honesty, courage, acquired qualifications, confidence, enthusiasm, earnestness, appli-

cation, preparedness, observation, self-analysis.

These he explained and elaborated upon them, pointing out how each has a bearing on the successful selling of motor cars.

J. L. Mahin of the Mahin Advertising Co. of Chicago, delivered one of the best talks of the session on "How to Use Advertising in the Retail Game," pointing out its many phases and kinks for the edification of the dealers. Special emphasis was laid on the fact that service for the customer is the great point for the salesman to keep in mind.

Convention Helps Roads

Miss Alma Rittenberry of Birmingham, Ala., spoke in a plea for a Jackson memorial highway from Chicago to New Orleans, and received the support of the convention, in that a resolution indorsing the movement was passed by the convention.

Following the visit to the speedway, H. G. DuPree of the Remy Electric Co., Anderson, Ind., spoke on the topic of service, asserting that the accessory maker must have service for his customers as well as the car maker. The motor car today is sold in competition with almost everything else, for people must give up other luxuries in order to afford the machine. Service for the customer is essential. It might be argued that service implies that something is going to happen to the product, but people become so delighted with the results of quick repair and so on that they lose sight entirely of this thought.

W. H. Boyd, western manager for the Curtis Publishing Co. was the next speaker, on the topic of "Salesmanship and Advertising." He brought out clearly when each is essential to the other. Advertising, instead of detracting in any way from the salesmen, multiplies his services many times. The whole type and standard of salesmanship is improving. Today a man can be a good man and still sell goods. The forces and influences which are put into the salesman's hands are a far greater asset today than any personal qualifications which he may possess. Here is where the sound manufacturing organization and good advertising compaign comes in.

PATHFINDER MAKERS GIVE DINNER TO A. L. WESTGARD

Mr. Boyd touched upon the actual and potential demand for advertising. Your advertising must not only convince the man who buys a car, but it must make converts to your line of all those with whom he comes in contact before the sale is made. Many of these may never buy a car, but they have an influence upon him who does. If public sentiment is in favor of a particular car, it will sell, for one is proud to own something which others admire. The inadequate advertising fiend was decried by Mr. Boyd, who said that to make a car known it must be hammered into the people incessantly. One big advertisement in a national publication followed by none at all is of little value. The article must be kept constantly before the public. Before signing up with any car maker the dealer should assure himself of the maker's consistent and national advertising campaign. For this reason, every dealer should become a student of advertising.

Talk by John Wetmore

John C. Wetmore, of the New York Evening Mail, stated that the dealer is the man behind the gun. The whole success of the industry depends upon the gunner. He sells 80 per cent of the cars made—the small dealer; not the branch manager.

"I am proud of what the newspapers of this country have done for the motor car," said Wetmore. The motor car was bound to arrive at its present state of perfection sooner or later, but through the aid of the press it has arrived 5 years ahead of time. Wetmore gave the dealer several tips as to how to get the best results from his newspapers in his home city. Stick to the sporting writer, and to the motor car writer—it is to the dealer's best interest for they can do a lot of good. In putting publicity in the newspapers, the dealers should use the right kind of stuff—that which has a news value. Boost the man who boosts you; put your advertising in the newspaper which supports motor cars, for this is the paper which is read by the class of people whom you wish to reach. Create a field of optimism and don't knock. This idea recurred in nearly all the talks delivered, and it is worthy of much repetition. Create a desire in the minds of the buying public to own motor cars—don't point out all the faults of the machine.

Perhaps the most significant point of Wetmore's talk was that he sounded a note of warning to the motor car manu-

DELEGATES TO CONVENTION VISIT SPEEDWAY AND WATCH EXHIBITION BY ANDERSON IN A STUTZ.

facturers. The motor car departments of the newspapers must have something to talk about—they must have real news—else they cannot survive. When there are no more races, motor car contests, hill-climbs, then there will be no more newspaper support. It is up to the makers to enter these things to furnish news for the press, and to keep motor news alive.

S. A. Seiberling, president of the Goodyear Tire and Rubber Co., Akron, O., delivered a masterly talk on the future of the industry. The industry has written one of the most spectacular pages in the history of the world, he said. For the coming year, he predicts the following: Value of the motor industry for 1913—$450,000,000; value of the accessory industry for 1913—$450,000,000.

At this rate, 10 years from now the motor car business and its allied interests will have a value more than four times greater than that of the great Pennsylvania railroad system. And when we shall have developed and taken advantage of our roads and highways by using motor cars on them, the motor industry will be worth more than the entire railroad interests of the country. The dealer is the medium for this great growth.

But, continued Mr. Seiberling, the dealer of the past had an entirely different problem from that with which the dealer of the future will have to cope. Cars must henceforth be sold, whereas, in the past they have been bought. Service in the future must begin when the car is sold. The dealers in each community have problems which are local to that territory, and these must be solved by cooperation.

H. L. Liebricht of the Export Advertising Co. spoke of the possibilities of extending foreign motor car trade. In foreign countries, all realize that the medium-priced American car has no equal. But the greatest drawback to the sale of American cars abroad is this question of service. The European manufacturer sells more cars in South America than does the maker from this country, simply because the buyer can get their cars repaired rea-

"Point of Contact" by Le Roy Pelletier

Flanders Advertising Expert Addresses Indianapolis Convention

By E. Le Roy Pelletier

BUSINESS is warfare, but is not necessarily guerrilla warfare. There are rules to the game and it is fair to play them. I cannot but feel respect for my competitor so long as he plays the game fairly, no matter how hard he may press me. I love my strongest competitor best. That is the principle we are working upon in Detroit. When a man in my line in Detroit is asked something about the other fellow, he will say, "He must be good or he could not be in our business; he must be splendid because nobody could stand the strain if he were not." We push him as hard as we can, but we have never got him over the edge yet. I think that is what the dealer should talk. The engineer will tell you that every man who builds a motor car honestly tries to build a good car; but there are a thousand different forms that can be used.

One engineer says this is the important factor; another says this is the factor of paramount importance; the other says this, the other that and so on. And yet each one builds a good car. You can say this to a customer and get more out of him than by trying to persuade your customer that the fellow across the road is a thief and rascal, and the other fellow over there never did a good thing in his life. Such a course only tends to discourage the prospective purchaser and causes him to hesitate to deal with anybody.

The topic that was given to me by Mr. McKee, who arranged the matter, was "The Co-ordination of Sales and Advertising." That is a consummation devoutly to be wished for; I believe it was Mr. Milton who used that expression. If we could ever get co-ordination between the advertising and sales there is nothing that we could not do. We advertising men look forward to that time and we are working for it and trying to attain it. You know advertising is your silent but most eloquent partner. While you are joy-riding advertising is working for you. After you have gone to bed in the evening some man is going over your advertisement trying to decide what car he will buy. Probably the man, who was not a prospect yesterday, is a prospect today. You must bear that in mind. Don't say, "I called on Smith 6 months ago and he didn't want a car." If Mr. Smith has read your advertisement, and he probably has, remember that it has been working upon him and he may now be in a much different frame of mind. Even last night his wife and he may have been reading over an advertisement, and got talking about it, and if the early bird happens to come along today there will be something doing immediately.

The field is limitless. A stable of cars is a very ordinary thing nowadays. The minute a man buys a $5,000 touring car he must have a runabout. He must have a business runabout. The minute he gets that his wife needs another car for her own use about town—an electric for town purposes. Then he gets four or five motor trucks which he uses instead of horses. And right there the average dealer is losing sight of an opportunity. I believe, because he does not realize the side lines in trucks and electrics, and in going to a man who has a—"Blue car"—I must not mention it, must I? I think it is blue, isn't it?—and telling him he needs a runabout, as I say, the field is practically limitless.

The main difficulty we have in our selling—well, they tell me I must not talk about anything in particular, but it is pretty difficult for me not to; so our toastmaster said if I slipped in a wrong gear he would kick out the clutch on me.

I was going to say that the great difficulty that we at headquarters have in the sales and advertising department is in getting the dealer to understand that the large amount of money that we spend in the national campaign is spent for his benefit entirely. I say his benefit entirely—he is there for our benefit entirely—no doubt about that; we cannot live without him.

But big business is a problem in selling. Mr. Smith puts it lightly, there are departments of selling, manufacturing and organization; but he says the one big problem after all is selling, and that is why we are interested in your welfare. It is a purely selfish interest, but a genuine one.

Speaking of that difficulty in getting the co-ordination—as Mr. McKee puts it—of the sales with the advertising, I am reminded of a very educative talk of Tom Dockerel on the subject of efficiency in salesmanship. I am going to quote him and tell you where I got it, and if you ever have a chance to hear that long, lanky Irishman, do it. He says the point of contact is the one problem in all sales campaigns, and he illustrates it this way: He says, "Suppose I say to you 'John Wanamaker.'" Immediately there comes into your mind the picture of a pyramid, because the pyramid is a figure or structure, the base of which stands firmly upon the earth and the apex stands towards the sky. Now, John Wanamaker sells corsets. He sends a man to Europe to investigate corsets. They have big factories over there and he sends engineers to Europe to investigate and find out if they have anything of value there. They used to have something to send us back. Nowadays we have something to send them. He buys a lot of expensive models and brings them home. He puts in an expensive window display. Then the expensive advertising man puts in a display of corsets. Then appears the woman who has read about them and seen the display, and when she enters what does she find? Not the pyramid, this colossal, solid structure with John Wanamaker standing upon the apex, but instead of that she finds an inverted pyramid, the apex of which stands on the head of $4 a week Annie, who does not know anything about the real merits of the corsets, and the whole thing goes to smash.

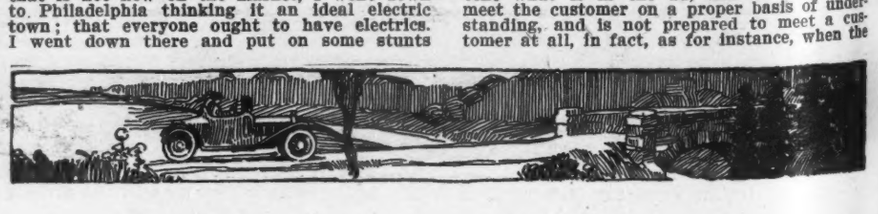
Now there is something about the gasoline car, the speed of it, that gets into a man's blood and it calls for a rather different kind of salesmanship than the electric car, but I find that as compared with the gasoline car the electric is more difficult. For instance, about 4 or 5 years ago, selling an electric that is not now on the market, I went down to Philadelphia thinking it an ideal electric town; that everyone ought to have electrics. I went down there and put on some stunts and put over a great advertising campaign, and then awaited results. Shortly a woman came in the store, and we had a man there, a great racing buck—I have forgotten who, he may have participated in the Fairmount Park races in which he was second or third. So I was standing in the store waiting to see what would happen. In came the woman. She looked at me and she looked around and she looked at the electric which had a wheel base shorter than the top, and she said, "Is there anyone in charge here?" I said, "Yes, the man under the car is in charge." All there was to indicate the man was a couple of legs sticking out from under the car. That was the point of contact.

She evidently was disappointed. She evidently expected to see something more than a pair of legs sticking out from under a car. Finally he scrambled out from under the car and with his arms all covered up with mud and gum he approached the woman and said to her, "What can I do for you?" She replied, "I want to look at an electric." He said, "Oh, yes, over there is the electric." She kind of stood and looked at him. He said, "Do you want to buy an electric?" She said, "Well, I was just looking." "What do you want to buy an electric for," he asked. "Why, I——." He asked again, "What do you want to buy an electric for? Why don't you buy a gasoline car?" She said, "I don't know. I read the advertisement last night and I came in to ask you why I should buy an electric." He says, "Search me, I don't know." He didn't know why anybody should buy an electric.

Another case that came to my notice the other day was down in the southwest where a big concern was trying to solve the second-hand problem. It advertised amongst the dealers a lot of used cars at very attractive prices, some of them as good as new. So the gentleman who was speaking of it said he went up and went into the sales manager's office, and he informed the gentleman in charge that he was interested in used cars. "Oh, yes, yes," said the gentleman. "Billy, take this gentleman out and show him those used cars." "What, in the lemon room," said the kid.

There is another example of point of contact. They had $4 a week Annie beaten to a frazzle.

That is a feature that you butt into all the time in the business. We put out a car that our engineering force has put their heart and soul into, and think that they have done the best thing yet, and then we send a large amount of money to advertise nationally, and we expect the dealer to go into his local city and supplement that advertising—we expect him to read the advertisement and try to believe it, in spite of the fact that the customer has read it, and we expect him to meet the customer with the same line of argument, because when a man is told a thing once and then hears the same thing twice he is inclined to believe it, and the third time he is sure to believe it; but if the dealer doesn't care a cent what is in the ad, and is not able to meet the customer on a proper basis of understanding, and is not prepared to meet a customer at all, in fact, as for instance, when the



sonably and quickly. There are many openings for American garages, where American cars are understood.

Ninety-five per cent of the chaffeurs abroad are Italian, Swiss or German, and these men do not understand the American car. They cannot repair it. Consequently, there is much demand for the American chauffeurs. There is an opportunity for many a young American in this business, therefore, in foreign lands. In all foreign countries, new roads are being built which broadens the field for cars. Last year Venezuela appropriated $285,000 for good roads, and she will set aside $400,000 for the same purpose for the coming year. The foreign field is unlimited.

F. M. Crawford of the International Correspondence Schools discussed practical motor car selling, saying that no factory is stronger than its selling organization.

The speakers at the various sessions of the convention were without exception masters of the subjects which they discussed. Most of them had years of valuable experience back of their remarks. A curious feature of the speeches was that all were extemporaneously delivered, and being so given, they were all straight out from tne shoulder.

The opening address was delivered by J. J. Cole who welcomed all to the city—the second in the industry. Others who spoke Tuesday were H. O. Smith, president of the Premier company; C. F. Kettering, president of the Dayton Electric Co.; E. Le Roy Pelletier, of the Flanders interests; former Mayor C. A. Bookwalter, of Indianapolis, and Elbert Hubbard.

Pelletier made one of the most entertaining speeches of the meeting. His talk on the "point of contact" was most interesting, for he showed how a sale could easily be made or unmade by the attitude of the dealer to whom the prospective buyer comes. In order to properly receive the man who has come to the salesroom in response to an advertisement, it is very important for the dealer to be thoroughly acquainted with whatever has been said in the advertisement.

Selling Cars as Viewed by H. O. Smith

Excerpts from Speech of the Premier President at Indianapolis

By H. O. Smith

I BELIEVE that the selling problem is the big problem, not only with the motor industry, but with every other line of industry. I believe a good dealer can hold up a poor car a little while, but a poor dealer can not hold up a good car very long. Therefore, you see that I place the greatest stress today, with the great development of the motor car on the distributor. The development of the motor car and the demand are very natural. It is strictly in line with the times. It is based on the transportation problem.

I don't know of anything to say which even promises to rival the motor car as a solver of the transportation problem. We have our railroads which connect our cities, but you have the motor car which takes you to your homes. In other words, it is without limitation. I think without any desire to reflect on anyone that the demand for the car today is practicable to the going motor car and not to any well organized educational campaign.

As a matter of fact, is it not too often true that the individual who has become attracted to the motor car is interested because of its worth, practicability and usefulness, and has dropped in to see the salesman, with the result that we see upon all sides? Isn't it so—that if the salesman could not say enough detrimental about his competitor's car, this man became a buyer? I don't think this is quite as generally true today as it was in the earlier days, but what I am thinking is, that if we would all educate our salesmen to first-off establish interest and confidence in the motor car generally, and a special interest in our own individual problems, we would rapidly broaden the interests, and I am not sure that we would not make more sales.

Take the salesman of today—the average salesman that is employed. Is it not true that when he first comes to us he presents a list of prospective buyers? Now, follow down this list and what do you find? You find that his list almost invariably includes or is confined to those who today own motor cars, who already are converts to the use of motor cars; but he has conceived the idea that if we pay that man enough money and buy his old car at an attractive enough price to the other fellow, he possibly can place another new car with him. But I want to ask you as practical dealers, have you broadened the influence and scope of the motor car one particle until you have placed that traded-in car, provided it is of any use, if there is any use left in it? I say, No. Of course, we can not entirely get away from this trading problem, and it is one of the big problems we are all confronted with and wrestling with; but I believe this: as soon as we get to the point where we do not pay any more for the second-hand car than the second-hand car is really worth or will sell for, that the second-hand car problem will to a very great degree take care of itself.

The manufacturer has two problems—producing and selling. In the selling department every broad gauge distributor must recognize that the dealer associated with his interests is a part of his selling organization, and why should any dealer join with any distributor who is going to be careless as to the welfare of any part of his selling organization?

I think, gentlemen, that you will agree—we must all agree when we study this subject, that we have only scratched the possible surface of the demand for the motor car. The big problem with us today is not—Can this country absorb 200,000, 300,000, 400,000 or 500,000 cars in a given period? As I see it, the question with us today is—Will we develop the uttermost buying power as soon as those cars are delivered?

I could name you one city in the United States which last fall, according to the record, had one motor car, I believe, to every nineteen men, women and children, and yet that city proved to be one of the best markets of the past season. This only gives you a suggestion of the great possibilities that are before us.

The motor car today is a practical conveyance. It was started as a fad or a luxury; but through its own worth and practical performance it has lifted itself out of that place and worked itself into the sphere in which it is now placed, and I think it will be less than 5 years when we will see, looking at the commercial side of this proposition, the huckster who today is making only 5 or 6 miles of the city and compelled to do his work on land valued at $100 to $1,000 per acre, with good roads and the motor propelled vehicle, instead of being located in or very near to the city limits, will be operating 5, 10 and 15 miles from the city on $150 to $200 an acre land.

And there is one of the keys to your cost of of high living—or rather the high cost of living.

We may all figure without a question on the permanence of the motor car. Why? Because it is a practical proposition. Its demand is on a practical basis. You need not fear anyone who has once kept it, the use of the motor car reverting to the old methods if it is possible for him to continue to have an automobile. It would be just as reasonable for us to think of us turning back to the prairie schooner or the horse-drawn street car as to go back to the old methods of transportation.

Discussing this proposition from the manufacturer's viewpoint, and considering the dealer's point as well, I think it is of much more importance that the dealer selects well his line; to be sure that he has not only what he considers the best selling line on his floor, but beyond that to be sure that he has enough confidence in that line and gives it sufficient support to do the line justice. If you do not possess full confidence in your line, how are you going to induce your possible buyer to have it?

The dealer today in many instances when he approaches the manufacturer first asks, not for "Let us see what the details of your product are," but "What is your discount?"

I think there is one of the things we might all think about very seriously. The manufacturer is entitled to a fair, legitimate profit. The dealer is entitled to a fair, legitimate profit. But there is a limit to what represents a fair, legitimate profit.

woman came in before looking at the electric and found him with his arms all begrimed, it is all off.

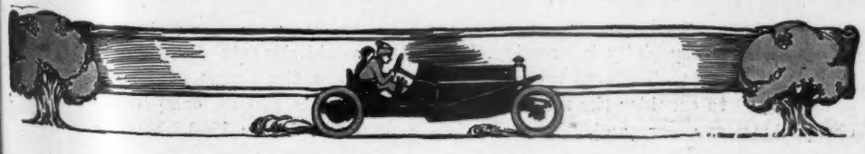
Another mistake that the dealer makes is this: There is an awful lot of good repair men stores are trying to make salesmen of them. If a man is a better repair man than salesman he ought to hire a salesman; and vice versa, if he is a better salesman than repair man, then he should hire a repair man and do the selling himself. If he has but a small place and has to do both, then he should have his repair department separate from his sales department.

There is nothing that so absolutely destroys all possibility of a sale as to have a person come into a show room, which occupies the front part of the store, and hear a car back there spitting on two cylinders. When a thing like that is going on the customer goes back to see what is the matter, and the dealer hurries after him and says, "No, that is not the car I want you to see; this is the one I want to show you." "Yes, but this is the one I want to see," says the customer, and the effect is bad. Point of contact again, you see.

There is no use for the expenditure of money and the employment of an engineering force and advertising force—it is of no value when we lose sight of the point of contact; when we send a customer into a store and the dealer balls up the sale. I must say this—even though you who are listening may not like it.

Now, there is not as large a percentage of salesmanship in the car business as there is in some other lines. Take, for instance, the typewriter companies, the Burroughs adding machine. How often do you suppose a man goes in to their places and asks for a cash register or adding machine? Not very often. But the salesman follows his man up. He goes in and says, "Bradstreet tells me that you do a certain volume of business. You need an adding machine. Don't tell me that you don't. You need an adding machine. You ought to have one. I can show you that with the volume of business you do it will be an economy to you." And there is only one kind of a report that such a salesman can ever send back to the factory—one is an order and the other is a burial certificate.

Now, we in this business have not done any real selling at all. The main part of the work has been standing back and telling the customer "We hope to deliver a machine next week. We were promised a machine last week but we did not get it. The business has been coming faster than we expected it." There is not one of us who can explain why. The customer knows he needs a car a blame sight better than we can tell him as a general thing, and all we need to do is to try to tell him which one he wants. But when he comes in and we proceed to tell him about the defects of machines, and we say, "This machine has a rotten rear axle" and "That machine has a bum starting device," and so on through a long list of defects that rival machines possess, when we get through he says, "Why, there are fifty or sixty different ways that a car can go wrong, and I don't believe I dare to take any."



Cotton Outlook Encourages Dealers

AUSTIN, Tex., Oct. 12—Cotton picking may be said to be finished in south Texas and the fields are rapidly being cleaned up in central Texas. Most of the gins in the extreme southern part of the state have closed down and in the middle upper portion they are now running only 2 or 3 days a week. The weather has been most propitious for gathering the crop, and while the shortage of labor interfered very much in some localities with the work, the outcome of the season is one of the best in the history of the industry in Texas.

In north Texas many of the fields are white with the staple and it will be some time before the harvesting is finished. There is a brisk movement of Mexican laborers from the southern and central portions of the state to the farms of the northern part and the labor shortage in the latter region is being rapidly overcome. With good weather the crop of the whole state will be harvested 2 or 3 weeks earlier than usual. Much will depend on the lateness of frost. If there is no damage from this source there will be a large top crop in north Texas and an extraordinary heavy yield in the western part of the state.

According to reports of bankers and merchants throughout the state farmers are meeting their obligations to these classes of creditors to a greater degree than ever known. This very satisfactory condition is attributed to the rapid marketing of the cotton crop and the good prices that are being obtained for the product.

Another noticeable effect of the prosperous condition of the farmers in the older cotton growing region of the state relates to the character of investments they are making with their surplus money. Many of them are purchasing cheaper lands in the former ranch region where cotton growing is becoming an important industry and are providing homes for their grown children. Others are taking stock in manufacturing enterprises and broadening their scope of industrial endeavor in other ways. First of all, however, the average well-to-do farmer who is not already provided with a motor car has either ordered one of these vehicles or contemplates doing so. The motor trade probably is receiving more direct benefit from the present general prosperity of the people of Texas than any other one line of trade.

It is stated by dealers in motor cars that their orders during the last 2 weeks from farmers have exceeded all previous records for a similar period and that the prospects are favorable for an increase in this trade during the remainder of the present year. St. Louis, the consensus of opinion was, is the most promising field in the United States today.

Success of Crops Means Many Car Sales in State of Texas

Estimates by responsible persons in the trade as to the amount of business that will be done in this city in the next year ranged from $9,000,000 to $15,000,000. Counting the sales which will probably be made in the St. Louis territory by St. Louis agents or subagents the amount of business has been estimated as high as $200,000,000. This estimate was made by one of the largest distributers of the St. Louis territory and included a larger part of Missouri, Illinois, Texas and a part of the south and southwestern states.

PRIZES FOR ILLINOIS DRIVERS

Springfield, Ill., Oct. 14—Awards in the tours to the state fair promoted in connection with motor day last Saturday have been announced. More than 100 cars participated in the contest, which consisted in tours from various counties in the state to Springfield. The winners were:

Tour 1—W. O. Guyton, Aurora, first; Mrs. G. H. Deane, DeKalb, second; J. I. McKown, Bloomington, third.

Tour 2—P. W. Kempster, Prophetstown, first; F. D. Miller, Fairdale, second; A. M. Smith, Stockton, third.

Tour 3—Ira Dodson, Joy, first; Mrs. W. J. Sweeney, Rock Island, second; Dr. B. E. Jones, Rock Island, third.

Tour 4—John T. Garm, Beardstown, first; C. J. White, Beardstown, second; Martin McDonough, Beardstown, third.

Tour 5—T. C. Nichols, Quincy, first; Dr. G. A. Lierle, Beverly, second; Allen R. Fry, Mt. Sterling, third.

Tour 6—J. H. Friedline, De Soto, first.

Tour 8—John Swick, Newton, first.

Cass county won the handsome Miller trophy for the county, with the most mileage in the tours. The total from Cass was 784 miles.

Automobile Blue Book prizes—To contestant having the most mileage—Mrs. G. H. Deane of DeKalb, with 341.6 miles. To the woman driver making the best record—Mrs. W. J. Sweeney, Rock Island; Mrs. Deane made the best record for women drivers, but the conditions were that two books could not go to the same person, and Mrs. Sweeney made the second best.

TWELVE IN DESERT RACE

Phoenix, Ariz., Oct. 11—Entries for the desert road race closed yesterday. Three Cadillacs, Buick, Franklin, two Americans, Schacht, Simplex, Hupmobile, National, Mercedes are entered.

The A. A. A. has sanctioned another race from San Diego to Phoenix, also starting October 26.

BREWER'S VIEWS ON AMERICA

London, Oct. 7—Robert W. A. Brewer since his return to England after a tour of inspection of American factories has put forth some of his views comparing American and British methods of manufacture which are especially interesting. England is at present all stirred up over what it is pleased to consider the menace of the cheap American car, and, therefore, has been reading Mr. Brewer's conclusions with great avidity.

The most remarkable feature of American manufacture which he mentions is that workmen can go to work at 7 A. M. and quit at 4:30 P. M. and still turn out a quantity of work which the British workman cannot nearly equal in a 12-hour day. The American treatment of workmen as practiced in American motor car factories was new to him. Systems of gauging and inspection as practiced in America, he thought, responsible largely for the resulting excellence of these so-called cheap cars, and he warns the British public against believing what they have been told that they are atrocious pieces of workmanship and material and will go to pieces after a few months' use. "On the other hand," says Mr. Brewer, "they are really very excellent little cars."

"The reason why the American car is cheap," he says in substance, "is that everything is systematized. Every man and machine works at maximum efficiency. A skilled man who is paid high wages to do a particular job simply does that job and the skilled part of it. The work is handed to him by a lower paid workman and another removes the job. He does not even have to turn around in performing the whole operation."

A large part of Mr. Brewer's conclusions are based on observations at the Ford plant in Detroit, Mich.

GRABOWSKY ORDER MODIFIED

Detroit, Mich., Oct. 16—An order modifying the injunction filed by John C. Kimble on September 17 against the Grabowsky Power Wagon Co. of this city was signed and filed in the Wayne county chancery court on October 14. The original injunction as filed by Kimball restrained the Grabowsky concern from carrying on business as well as preventing its sale. The intention of Kimble was merely to restrain the sale and the original order has been modified to this effect by the Wayne county court.

CANADIAN CENSUS FIGURES

Montreal, Oct. 11—The census reports of manufactures taken in 1911 for the calendar year 1910 are now compiled. Compared with the census of 1901 for the year 1910 they show an increase in the 10 years of 4,559 in the number of working establishments, of $798,829,009 in the value of capital, of 175,108 in the number of persons employed, of $127,274,301 in the earnings of salaries and wages and of $683,722,157 in the value of products. The statistics of establishments for the year 1910 are given in the report. The number of industries is 300 as compared with 274 in 1905 and 264 in 1900.

Rambler Dealers Report on Outlook

KENOSHA, Wis., Oct. 14—Four hundred and fifty Rambler dealers, in as many sections of the United States, have contributed to an important statistical analysis of business conditions just compiled by the Thomas B. Jeffery Co. in connection with their sales plans for 1913.

From every section of the country have come reports regarding crop conditions, the business outlook and the general situation of the money market.

The present healthy condition of the industrial, agricultural and money markets was anticipated by officials of the Jeffery company before the first 1913 Cross-Country was ready for shipment. As a result of this analysis the company last week was able to make to its salesmen and dealers a formal statement in which it was pointed out that contracts closed to date cover 40 per cent more cars than were sold during all of last year—this without any allowance for sales through the branches.

G. M. Berry, secretary of the company, now is on a tour of inspection of the New England states. G. H. Cox and E. S. Jordan, also officials of the company, have completed similar investigations. Mr. Cox has traversed the central western and southwestern states, including Iowa, Kansas, Nebraska, Missouri, Oklahoma and Texas. The central states including Illinois, Wisconsin and Indiana, have been covered by Mr. Jordan.

Not satisfied with superficial reports and hearsay information these men themselves have gone to the farmer; they have plied him with questions, they have looked over his crops, they have gone to town and talked to his banker, they have interviewed the merchant who sells him his household supplies; they have inspected the grain elevators and they have gotten from the railroad freight traffic managers a fund of information regarding the shipment of cars.

From P. J. Downes, who represents the Jeffery company in Minnesota and the northwest, comes the statement that not in recent years has the crop yield in Minnesota, North Dakota, South Dakota and Montana been so promising. To this is added the report of investigations by G. G. Muma, representative of the Jeffery company in northwest Canada. With the exception of a few isolated sections, crop conditions in Canada are declared by dealers with whom Mr. Muma comes in contact to be almost equal to conditions in the northwestern states.

Information received from L. H. Bill, representative for the Jeffery company in San Francisco and on the Pacific coast, is that while the fruit crop is small, general industrial conditions including building never before were brighter.

The agricultural outlook in Texas, Louisiana and Florida, Jeffery dealers declare, indicates large sales of cars during the next 8 months.

The general condition of the central states as summed up in the reports submitted by dealers is best reflected in Iowa. The total production from the fields of this state alone will amount to $402,000,000.

Throughout the east and in the manufacturing centers of New England business conditions are keeping pace with those in the west. The Thomas B. Jeffery Co. has had its finger on the financial and industrial pulse of this section as it has upon the pulse of every section of the country from Maine to California and from Texas to northern Canada. If this is to be a bumper year in corn and wheat it is also to be a bumper year in motor car sales.

Statistical Analysis on Business Compiled by Jeffery Company

PECULIAR WINDSHIELD RULING

Washington, D. C., Oct. 12—A peculiar ruling has been made by Judge Pugh, sitting in the police court, to the effect that a motorist is guilty of criminal negligence who drives with the windshield of his car up or in use through the streets at night when it is raining. The defendant was Robert Parrott, a business man, who was charged with colliding with Harold Durnell. "Motorists should be willing to take a few rain drops to avoid accidents," said Judge Pugh, who is himself a motorist. "I know no man can see through the glass of a windshield on a rainy night if the glass gets wet. I drive a car myself and know whereof I speak. Windshields are to shield the wind and not the rain."

STREET CAR LAW AMENDED

Chicago, Oct. 14—The local ordinance which prohibits motor cars passing street cars which have stopped at crossings to take on or let off passengers has been modified by the city council which has just amended the regulations so as to include all vehicles. A test case had been threatened by motorists who claimed class legislation, and the city fathers, rather than risk having the law wiped off the books, made the change which, it is thought, will make the clause iron-clad.

The city ordinances are coming in for considerable attention of late. Only recently Judge Freeman of the municipal court handed down a decision holding invalid the ordinances prohibiting motor cars smoking, holding that the city had no authority to pass this ordinance because the motor act passed by the last legislature took away from the city the right to regulate motor cars and that the state law superseded the city ordinance. Since that decision the city has not brought any of the smoke cases to trial. An appeal will be taken, as it is held the smoke ordinance is a traffic regulation and being so it is within the province of the city to pass such a law.

A bill now before the judiciary committee would compel owners of cars fitted with self-starters to further equip them with locks so the motors cannot be started by small boys or mischievious persons. Another bill calls for fenders being fitted to all motor cars.

TRUCK CLUB ON COAST

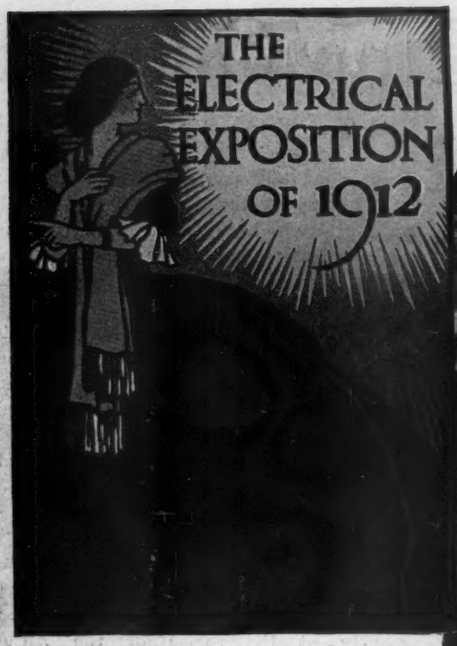
Los Angeles, Cal., Oct. 12—An enthusiastic meeting of the motor truck owners and dealers of Los Angeles was held recently at the rooms of the Automobile Club of Southern California, at which time the Motor Truck Club of California was organized with W. T. Wood as president and George H. Harrison as secretary and treasurer. Mat Moreland was elected chairman of the legislative committee and D. L. Whitford was appointed chairman of the membership and finance committee. The motor truck road to the harbor will be one of the features to be urged by the new organization and the legislative committee will take up all forms of proposed motor truck legislation with the city fathers.

NEW SIGNAL LAW FOR CINCINNATI

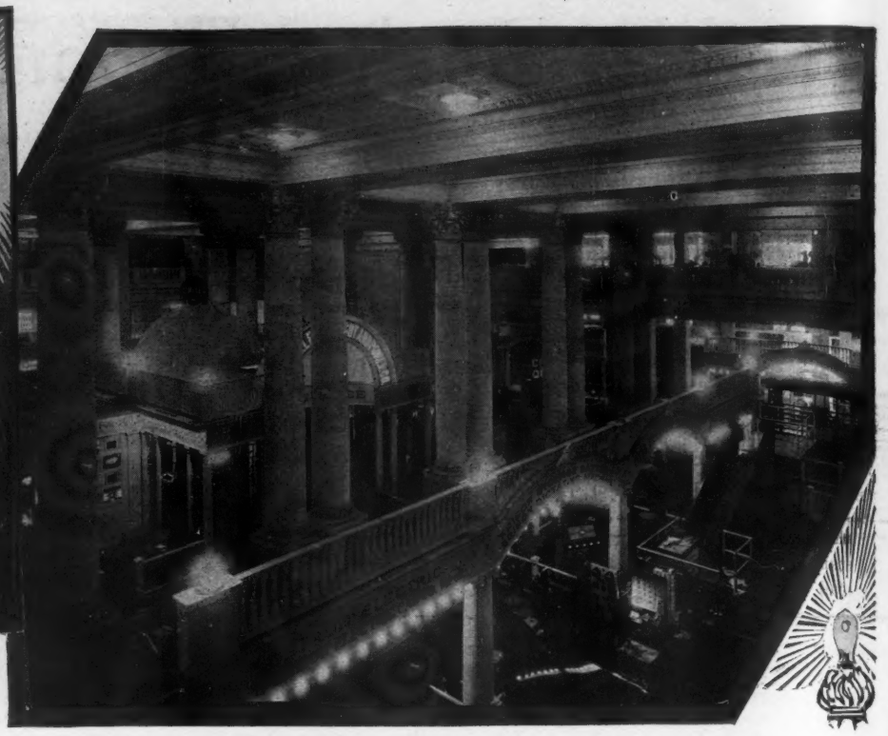
Cincinnati, O., Oct. 15—Up to September 23, motorists in Cincinnati have been prohibited by law from using any other form of signalling device than the bulb and reed horn. Following an investigation into the cause of an increasing number of street accidents, the council came to the conclusion that the inadequate warning of the bulb horn was largely responsible for a great proportion of the street fatalities in which motor cars were concerned. On September 23, accordingly, the bulb-horn ordinance, which had been in force since December 14, 1903, was repealed, and a new one enacted. This new ordinance is more than an amendment, as it differs radically from its predecessor. It reads as follows:

Section 850. Every motor vehicle or motorcycle while being used upon the streets of this city shall be provided with a suitable bell, horn or other signal device, and it shall be unlawful for any person to use any device which will not produce an abrupt sound sufficiently loud to serve as an adequate warning of danger, and it shall be unlawful for any person to make or cause to be made any unnecessary noise with any such bell, horn or signal device, or to use the same except as a warning of danger. Automobiles, motorcycles and other self-propelled vehicles shall not emit unnecessary smoke.

The new ordinance closely resembles those recently passed in Chicago, St. Louis and Newark, and indicates a progressive trend in motor car legislation in this regard at least.



NEW YORK ELECTRICAL SHOW POSTER



VIEW OF GRAND CENTRAL PALACE DURING ELECTRICAL SHOW

NEW YORK, Oct. 12—The electrical exposition of 1912 opened at the Grand Central palace on October 9 and will continue until October 19. In its general scope it is larger and more complete than any of its predecessors, but in the way of motor trucks and pleasure cars the representation is not so large as has graced a number of former shows. Ten companies are exhibiting. One company failed to receive its show car in time for installation. The exhibitors are as follows:

Anderson Electric Car Co., Detroit: Detroit Electric pleasure cars.
Atlantic Vehicle Co., Newark: Two models of trucks.
Baker Vehicle Co., Cleveland: Pleasure cars and 2-ton truck.
Champion Electric Vehicle Co., New York: 750-pound wagon and 1-ton truck.
Buffalo Electric Vehicle Co., Buffalo: Electrics.
General Motors Truck Co, Pontiac, Mich.: Model 5-ton truck.
General Vehicle Co., Long Island City: Trucks of assorted sizes.
Lansden Co., Newark: Municipal and commercial trucks.
Studebaker Corporation, Detroit: Assorted trucks.
Ward Motor Vehicle Co., New York: 1,000-pound wagon and 1-ton truck.

All told there are ten models of pleasure cars, representing the Anderson, Baker and Buffalo companies. The line of trucks is more complete, consisting of eighteen models made by eight companies.

An important feature of the exhibition is the testing track that has been established on the third floor. The three companies showing pleasure cars have one or more of their cars assigned to the testing floor and running demonstrations are given at each session.

The attendance on opening day was excellent, it being estimated at 5,000.

WELLS-FARGO TRUCK ORDER

New York, Oct. 16—Special telegram—About one-third of the reported order for 100 motor trucks for the Wells-Fargo Express Co. has been placed, according to statement current in the industry. The present order numbers thirty-five and is divided among seven companies, as follows: General Vehicle, nine electrics; American Locomotive Co., six gasoline trucks; Packard, six; Mack, four; General Motors, four, and Lansing, one. The cars will be distributed among the New York, Chicago, St. Louis and San Francisco establishments of the company.

Car Makers Participate in New York Show—Big Session in Boston

WEST POINT WANTS TRUCKS

Washington, D. C., Oct. 12—The quartermaster of the military academy at West Point, N. Y., in his annual report advocates the purchase of at least four more 3-ton motor trucks. He says: "Motor trucks meet the demands for transportation at this post much better and more economically than horses or mules whenever hauling can be done on main roads. A supply of at least four more of the 3-ton trucks would greatly aid in hauling forage subsistence and miscellaneous supplies from railroad station and public wharves. The truck now on hand has proven highly satisfactory."

MAKES FAST ROAD RUN

Savannah, Ga., Oct. 16.—Four Philadelphia to Savannah in 56 hours is the record of A. A. Artley, of Savannah, and F. C. Bowman and B. C. Bowman, of Williamsport, Pa. The party made the trip in Artley's E-M-F. The party was on the road exactly a week, but only 56 hours was devoted to running.

BOSTON, Mass., Oct. 12—The feature of the week here was the big convention of the Electric Vehicle Association of America which was held here the past few days, the association representing a capitalization of $500,000,000 in the motor world. It was the third convention of the association and there were present more than 150 members. President William H. Blood, Jr., of Chicago, called the convention to order Tuesday morning saying among other things:

"A few years ago electric vehicles were not largely used and the public was unacquainted with their true value. The vehicle manufacturers were not making large sales and their factory and selling costs were necessarily high. As few electric vehicles were being marketed the makers of batteries were making correspondingly few batteries. Central stations with comparatively high rates for current were hindering rather than helping the introduction of electric vehicles. All of these interests awoke at about the same time, joined hands and formed this association with the result that the use of the electric vehicle has increased marvelously and its adoption is becoming more general.

"It is proper, I believe to call your attention to the comparison between gas and electricity. Only a few years ago gasoline was a byproduct. When the motor industry started the ruling price was 10 cents a gallon. This price has constantly climbed to 14, 16, 18 and 20 cents, and even to as high as 25 cents in some localities. The garage owners are probably justified in opposing this rise, for the wholesale price is being advanced constantly, and the ultimate consumer, as

usual will pay the bill for the gasoline.

"On the other hand the rates charged for electricity are constantly on the decline. The price of electricity used for charging batteries in the first electric vehicles was at the rate of 20 cents per kilowatt hour; a 15-cent rate soon followed, and for a number of years a rate of about 10 cents or thereabouts has been common. Today the user who charges his own single vehicle gets rates varying from 9 or 8 cents down to 4 or 5 cents per kilowatt hour, while the larger user, in certain localities, pays between 2 and 3 cents. The entire tendency is downward. Is not this bit of history convincing argument for the prospective purchaser of a commercial vehicle?"

Reports were then presented by committees on operating expenses, rates and charging stations, publicity, insurance, standardizations, etc. C. E. Michel then read a paper "Where We Stand Today." He presented some interesting facts and figures relative to the growth of the electric vehicle business. He said among other significant statements: "In St. Louis our revenue from charging during the first 6 months of 1912 increased at the rate of $1,000 a month or nearly 37 per cent more than the previous year. It is estimated by Mr. Williams of the Edison company of New York that the number of electrics in use in New York has increased 35 per cent in the year ending June 1, 1912. Mr. Jones of the Commonwealth Edison Co. of Chicago, estimates that in June, 1912, there were 200 electric vehicles under order but undelivered to Chicago business houses.

"Street and Traffic Conditions as Related to the Electric Vehicle" was the topic prepared by R. McAllister Lloyd. In it was suggested the need of dividing streets to provide a surface for motor traffic. The paper was followed with great interest.

The forenoon session ended with the members discussing the papers. After luncheon they were taken for a drive through the historic sections of the Bay State. At the evening session there was an election of officers resulting as follows: Arthur Williams, president; F. W. Smith, vice-president; Harvey Robinson, secretary; Day Baker, treasurer; William H. Blood, Jr., P. D. Wagoner, G. N. Kelley and E. S. Mansfield, executive officers for 3 years; and William G. Bee for 1 year to fill an unexpired term.

Papers then were presented by Frank W. Smith on "The National Cooperative Advertising Campaign of the Electric Vehicle Association of America"; Dr. Harold Pender and H. F. Thompson on "Notes on the Cost of Motor Trucking;" and Bruce Ford on "Some Recent Developments in the Lead Battery for Electric Vehicles."

DISPLAY OF G. M. C. ELECTRICS IN NEW YORK SHOW

The second day's session was called to order by the new president, Arthur Williams. Ex-president Blood took the floor and declared that the members who were refusing business were making a mistake and he further contended that every manufacturer of electric vehicles should have ample capital to increase his plant to meet orders. Stephen G. Thompson then delivered a talk on "The Future of the Electric Vehicle in the East." He said among other things: "The industry is steadily gaining ground in its proportion to the total number of commercial vehicles in use. The reason for this is not far to seek, in that the market for commercial power wagons is found to be in those states that are the most densely populated. In New York, Pennsylvania, Illinois, California, Ohio, Massachusetts, Michigan and New Jersey, with a total population of nearly 40,000,000 people, more than 20,000 commercial vehicles are in daily operation, these states leading all the others in rank of population in cities of 25,000 inhabitants and more. Logically, therefore, the future of the electric vehicle lies in the east, this being the section of the densest population and hence of the most extensive street freight movement."

The convention adopted a standard plug for charging, and also a standard bayonet lamp socket to be used in the future on all electric vehicles constructed. The convention also recommended that a flat rate be charged for garaging and a kilowatt hour charge for current be used in the future. The convention ended with a theatre party in the evening. Many of the members remained here throughout the week attending the electric show now going on in Mechanic's building.

TWO OF THE TRUCKS OF GENERAL VEHICLE CO. IN NEW YORK SHOW

Routes and

Rincon Sea-Level Road Soon Completed

By Paul Gyllstrom

WHEN during a brief campaign $36,000 was raised in popular subscriptions for the Rincon sea-level road a year ago, few active in the work realized what a stupendous task had been undertaken.

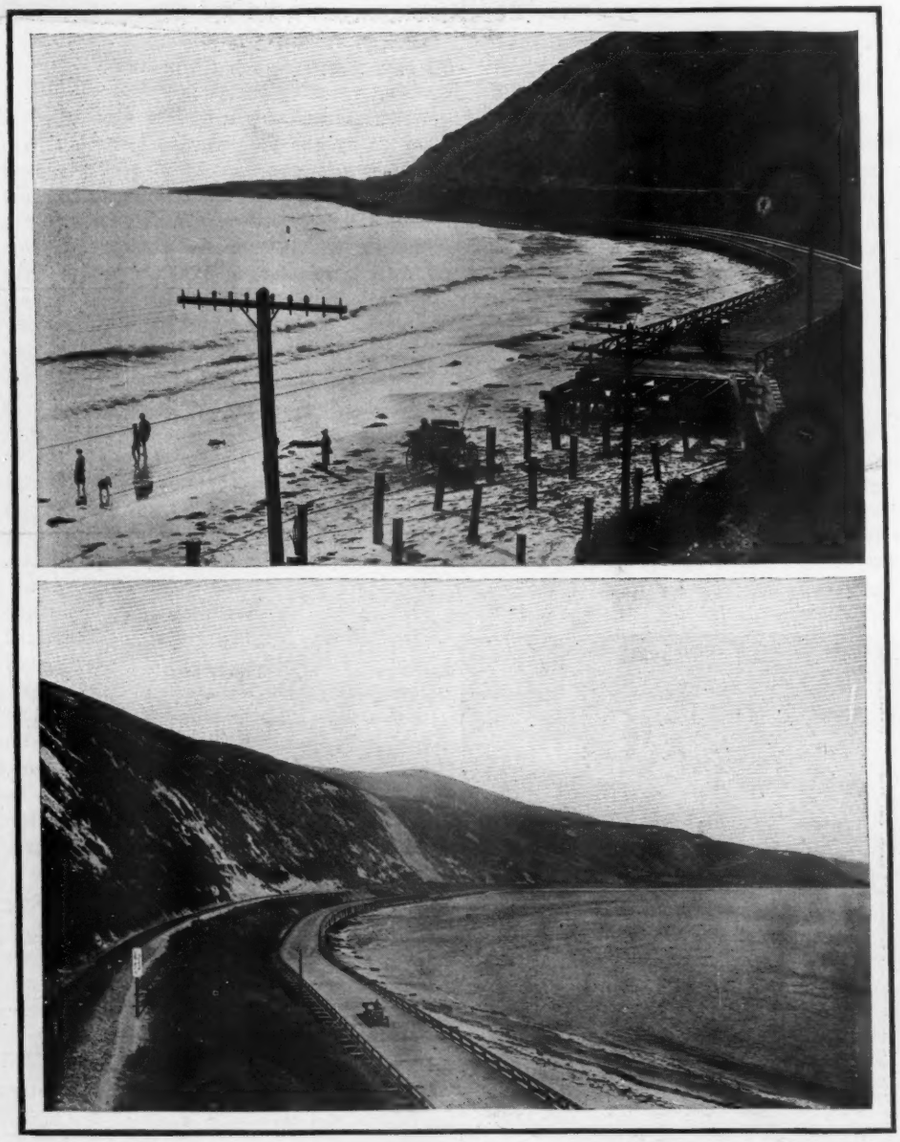
With all the money expended the work on 6,800 feet of causeways was uncompleted. There still remained 2,000 feet of the floor to be built. It appeared futile to again enter upon a money-raising-campaign. In a dark hour somebody got the notion of appealing to the state highway commission. With the knowledge that the members of the commission were very friendly towards this section of the state, nevertheless the promoters were more than agreeably surprised at the promptness with which the commission came to the front and assumed all further responsibility for the work, the additional cost amounting to $10,000.

All deeds to the causeways were turned over to the highway commission by the Santa Barbara chamber of commerce early in September and it is hoped that the remaining 2,000 feet of causeway will be completed so that the opening run over it can be made by the Automobile Club of Southern California some time during October.

The Rincon takes its name from Rincon creek, the dividing line between Santa Barbara and Ventura county. The work lies entirely within Ventura county, and is 15 miles south of this city, Santa Barbara. It is but a short distance after crossing the creek at the base of the mountain, to the first causeway, 2,000 feet long. This then leads over the unimproved road which is flanked with a rip-rap sea wall provided by Southern Pacific, which has been kindly inclined towards the Rincon road. This sea wall is at a point where the tides of winter inundate the road. A few hundred feet beyond is a shorter causeway 400 feet long. About a mile of roadway follows and to the west at what is known as Punta Gorda is the last causeway, 4,400 feet long the scene of present operations, and the most picturesque of all. It has a number of windings, but not in the form of turns. There is a simple variety that will add pleasure to spining over the firm and paved portion. From this causeway Ventura can be reached.

The method of construction is simple. Eucalyptus piles are driven, cross beams are laid, then the floor of the causeway, and the wooden railings on each side. Asphalt will in time be laid. All causeways are 20 feet wide.

The task of building these causeways is quite an unusual one, and it was started when it became evident tourists feared coming through here because of the reputation of the Casitas Pass, which lies just beyond the mountains of the Rincon. In fact, for years the project of constructing a road around the Rincon has been discussed but it was a bit slow in taking



TOP—THE 4,400-FOOT CAUSEWAY WHEN TAKEN OVER BY STATE HIGHWAY COMMISSION. BOTTOM—LOOKING EAST OVER THE FIRST SECTION COMPLETED

Road Directions for

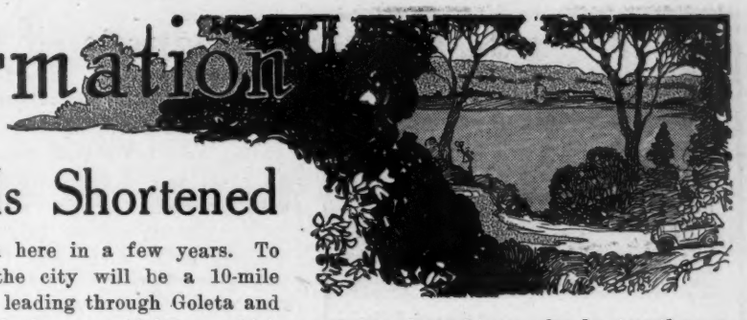
TO HOUSTON, TEX.

Rocky Ford, Colo.—Editor Motor Age—Please give me the best route from La Junta, Colo., to Houston, Tex., the road conditions and distance.—W. T. Best.

LaJunta to Raton, N. M., is 117 miles through Timpas, Thatcher, Simpson, Poso, Kadrew, Hoehne, Elmora, Trinidad, Starkville, Gallinas, Morley and Raton. The roads are fair dirt and you will find good mountain roads in the Raton pass. Although there are short stretches which are not bad, high centers and bad rock road predominate, and there is a bad sand stretch at the Canadian river. From there on the road is good. Between Raton and Amarillo the wayside points are Capular, Lakeside Farm, Dedman, Des Moines, Mt. Dora, Clayton, Texline and Dalhart. This is 242 miles.

To Big Spring it is 163 miles leading through Canyon City, Happy, Tulia, Kress, Plainview, Lubbock, Tahoka, Lamesa and Soash. Turn east to Fort Worth, it being 111 miles to Abilene through Coahoma, Iatan, Westbrook, Colorado, Loraine, Roscoe,

Touring Information



Distance to Los Angeles Is Shortened

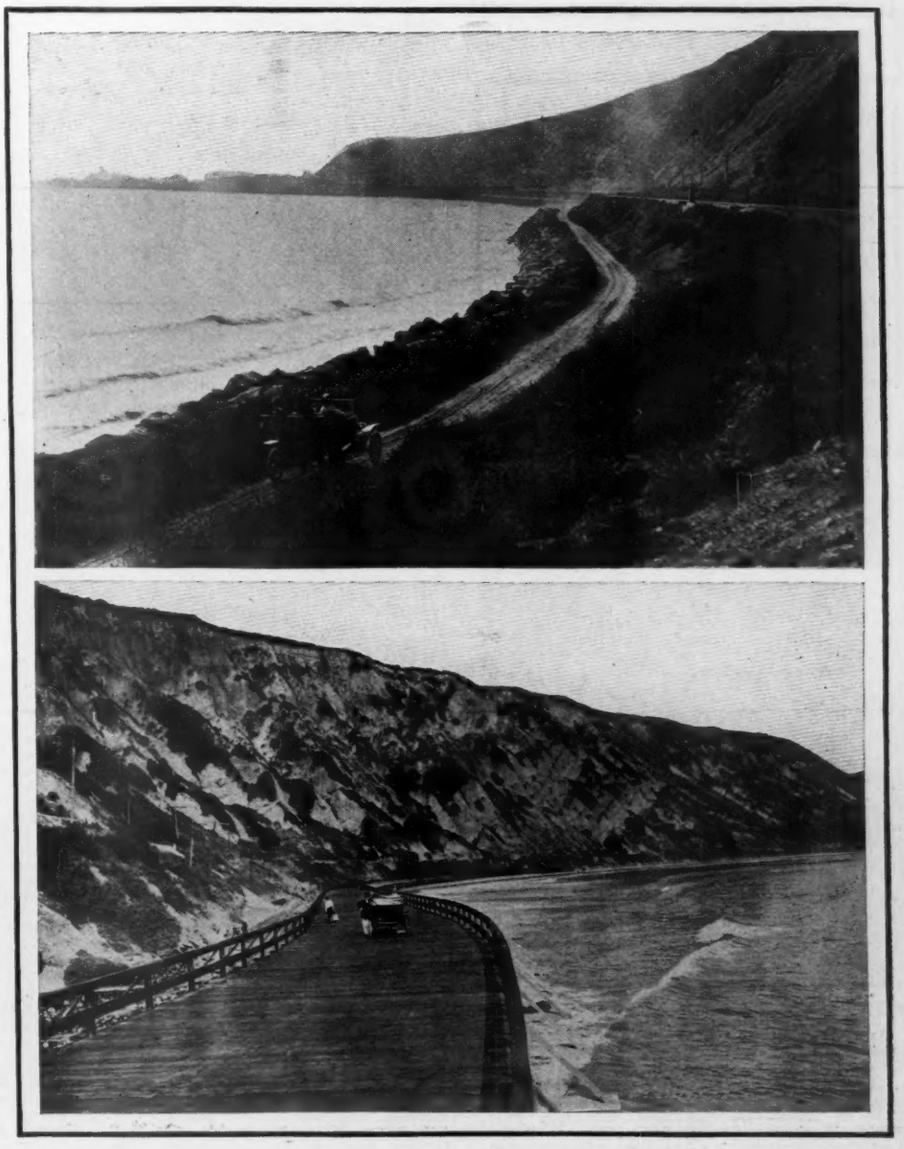
shape. It was found the expense would be unusual because of the fact a considerable portion would have to be bridged. In early days, before the road through the mountains was built, this stretch was a part of the historic El Camino Real. It could only be passed in places at low tide, and it was just such places that had to be provided for.

There has been a great deal of nonsense written about the dreaded Casitas pass. It is true this pass has taken its toll of lives, but chiefly among the careless. It will continue to be one of the scenic wonders of the west, and the motorists who visit southern California and fail to go through it at the proper time of the year, will have missed one of the sights. One might just as well go to Seattle without seeing Mount Rainier, or Tacoma without seeing Mount Tacoma, and the Yosemite without gazing on Half Dome, as come to this part of the country without traversing the Casitas. That the pass is not so dreadful may be gleaned from the fact that the hundred mile record from Santa Barbara to Los Angeles is less than three hours, and fifteen of the miles are through the Casitas.

The importance of the Casitas will lie in rapid transit between Los Angeles and Santa Barbara, and it can be expected that tourists will take more kindly to the idea of coming here with a perfectly safe road in prospect. But the Casitas will surely continue to share honors. By eliminating it the distance has been shortened 9 miles.

While the Rincon will be open for travel this winter, by another year there will be many road changes in Santa Barbara county that will startle tourists who have not been here in a few years. To the west of the city will be a 10-mile paved stretch, leading through Goleta and connecting with the coast highway, which the state highway commission is now having surveyed. There is some uncertainty when the latter work will be started, but the Goleta road division has provided funds for the 10 miles, and work is nearly half completed. Through the city there will be a main artery, well paved, and connecting with the Coast highway on the south. Bonds have been voted in the Carpinteria district for paving 10 miles and which will lead towards the Rincon.

At no place on the coast are mountains and sea brought so closely together as along the Rincon. The Southern Pacific coast line traverses it, the road lying below the railway. One has a great sweep of the Pacific the entire distance of 12 miles, a view unsurpassed on the coast. At Punta Gorda where the work is now being carried on there are millions of mussels which cling to the rocks. They are a luscious bit, and picnickers can make a fine meal from them. In fact, mussel bakes promise to be an added feature to the Rincon once the road is open.



TOP—SHOWING RIP-RAP SEA WALL AND UNIMPROVED ROAD LOOKING WEST. BOTTOM—ON THE 4,400-FOOT CAUSEWAY LOOKING EAST

Touring Readers

Sweetwater, Trent, Merkel, and Abilene; then 176 miles through Hamby, Albany, Breckenridge, Palo Pinto, Mineral Wells, Weatherford, Annetta, Aledo, Ben Brook and Ft. Worth.

Ft. Worth to Waco is next and the routing is Crowley, Cleburne, Cuba, Grandview, Itaska, Lovelace, Hillsboro, Abbott and West. This is about 107 miles, and to Houston it is 232 miles: the intermediate towns being Marlin, Lott, Rosebud, Cameron, Rockdale, Caldwell, Somerville, Brenham, Bellville, Sealy, Wallis, Rosenburg, Richmond and Sugarland.

FALL WISCONSIN TRIP

Minneapolis, Minn.—Editor Motor Age—I would like to take a trip in my roadster from Minneapolis to Milwaukee, by way of La Crosse, Sparta, Tamah, Kilbourn, Portage, Cambria, Randolph and Beaver Dam. I would like the most feasible, and most pleasant route to follow. Is there any difficulty to be met in crossing the dividing ridge in the vicinity of Tunnel City, Wis.? In going from here to La Crosse would it be best to travel in Minnesota or in Wisconsin?—R. M. Roberts.

CAMP NEAR CHEYENNE, WYO.

SCENE IN SIERRA MOUNTAINS

A NEBRASKA ROAD AFTER A RAIN

Expenses of Camping Tour from Illinois

LOS ANGELES, Cal.—Editor Motor Age—Leaving Peoria, Ill., June 10, and routing over the central highway, my son, his chum and myself, arrived in Los Angeles, July 12. The trip was made in a 35-horsepower car and we carried a complete camping outfit, tents, cots, blankets, gasoline stove, goodly supply of eatables, suit cases,—in fact about 600 pounds besides the three of us, and much too heavy a load for speed as we found out afterwards. Yet, it is the way I would go again even if the load did cause many breaks which could have been avoided, by putting straps around the front axles and springs. The experiment was well worth the time and money, and the little breaks and tire troubles we had. In fact, one cannot help but overload, if they have plenty of blankets, gasoline, and water, all of which are very much needed on an overland trip.

From Peoria we went to Galesburg and Davenport then over the River-to-River road which is a very good one most of the way and well marked by white stripes on the poles and at all turns. We made West Liberty the first day, Adel the second, and Omaha, in a driving rain, the third. We were advised to go by way of Lincoln instead of Fremont and Columbus which was very poor direction as we found later. The mud was hub deep across the Platte bottoms at Ashland, and we only made Lincoln that day. The next day they improved a trifle. York to Kearney was little better, and from Kearney on they were pretty good. We camped at Elm Creek, and made North Platte the next day and Chappell the following.

In negotiating a heavy grade the rear-drive-pinion broke, but we had another with one cog out, and substituted it for the broken one. The next bad luck was broken springs on account of rough roads and many heavy grades. At Paxton and Sidney we repaired the springs and purchased heavy strips for the front ones. We camped near Sidney and arrived in Cheyenne next day where we waited 4 days for a new pinion which had been orderd by wire. After the pinion came Sunday night we got as far as Laramie over the continental divide, which is an elevation of about 8,000 feet. With good hard roads on the old Overland trail after leaving Laramie even mud houses were few and we reached Rawlins, Wyo., where we bought a canvas water bottle holding 2 gallons and at Hanna another holding 1 gallon. We were never out of water for drinking or making coffee though many times our hands and faces went without.

Rawlins to Rock Springs was the worst part of our trip—the roads were badly gullied—there were alkali flats that looked good but which the car would break through, numerous high centers, and in many places the road followed the old grade of the Union Pacific railroad, which is bad. The Red desert country was the worst stretch of road we encountered, but every moment was well spent and thoroughly enjoyed. The best stretch of road in Wyoming is from Rock Springs to Green River. At Granger,

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The best road to La Crosse is on the west side of the Mississippi, routing through Westcott, Rich Valley, Cannon Falls, Wastedo, Hader, Zumbrota, Pine Island, Rochester, Eyota, Dover, St. Charles, Utica, Lewiston, Stockton, Winona, Witoka, Eidgeway, La Crescent and over the river to La Crosse. La Crosse to Kilbourne as far as Kendalls is mostly good hard clay road, the rest being largely sand, and routes through St. Joseph, Middle Ridge, Portland, Cashton, Ontario, Kendalls, Elroy, Union Center, Wonewoc, Reedsburg, Delton, about 100 miles. Your best road to avoid sand is by way of Madison instead of Portage and Beaver Dam, going first to Delton, Lyons and Baraboo, then Prairie du Sac, Sauk City, Ashton and Pleasant Branch, 46 miles.

Two very good options to Milwaukee are as follows: one 15 miles through Sun Prairie, Marshall, Waterloo, Portland, Hubbleton, Watertown, Oconomowoc, Nashota, Hartland, Pewaukee, Brookfield; and the second 82 miles through Vilas, Lake Mills, Aztalan, Johnson Creek, Concord, Delafield, Waukesha, Brookfield.

By the route outlined herewith, running directions for which is contained in the Blue Book No. 4, you will notice you do not go by way of some of the towns you have mentioned. Believing that you want the most direct route the best roads will give you has prompted our routing you this way.

KANSAS TO ALTOONA, PA.

Morrill, Kans.—Editor Motor Age—Please give the best route to Altoona, Pa. I want to start October 20.—E. W. Davis.

Go to Kansas City by way of St. Joseph, as this longer route offers the best traveling. Take in Hiawatha, Highland, Manning, Troy, Blair, Wathena, St. Joseph, Hall, Russville, Atchison, Lowemont, Leavenworth, Lansing, Wallula, Piper and Kansas City, making it a distance of 135 miles.

It is a 2-day run across Missouri. Between Kansas City and Boonville, where you cross the Missouri river by ferry, you run through Centropolis, Evanston park, Independence, Blue Springs, Grain Valley, Oak Grove, Odessa, Mayview, Higginsville, Corder, Blackburn, Mt. Leonard, Marshall, Arrow Rock and Lamine. New Franklin is on the north side of the river and the road to St. Louis lies through Rocheport, Columbia, Millersburg, Fulton, Calwood, Williamsburg, Mineola, Danville, High Hill, Jonesburg, Warrenton, Truesdale, Wright City, Floristell, Wentzville, Colterville, St. Charles, Pattonville and Wellston.

Indianapolis is 244 miles from St. Louis and is reached through Collinsville, Troy, St. Jacobs, Highland, Pocahontas, Stubblefield, Greenville, Mulberry Grove, Hagerstown, Vandalia, Bluff City, St. Elmo, Altamont, Effingham, Teutopolis, Montrose, Woodbury, Greenup, Casey, Martinsville, Marshall, Terre Haute, Seeleyville, Staunton, Turner, Brazil, Harmony, Reelsville, Manhattan, Mt. Meridian, Stilesville, Belleville, Plainfield and Bridgeport.

After a continuous rainy spell this road through Kansas is not a good one, and no difficulty should be experienced under any other conditions. The same is true of the road through Missouri and Illinois.

Traveling on the old National Pike you route through Cumberland, Greenfield, Ogden, Louisville, Dublin, Cambridge City, Centerville, Richmond, Eaton, New Lebanon, Dayton, Harshman, Fairfield, Enon and Springfield, where you will find most excellent gravel pike roads following through Harmony, Vienna, Brighton, Somerford, Lafayette, W. Jefferson, Alton, Columbus, Granville, Newark, Hanover, Nashport, Irville, Zanesville, Bridgeville, Norwich, New Concord, Cambridge, Washington, Elizabethtown, Fairview, Hendrysburg, Morristown, Lloydsville, St. Clairsville, Bridgeport, Wheeling, West Alexander, Claysville, Washington, Canonsburg, Bridgeville, Carnegie and Pittsburgh.

The last stretch is 119 miles to Altoona, the most desirable route being through Wilkinsburg, E. Pittsburgh, Turtle Creek, E. McKeesport, Circlesville, Jacksonville, Irwin, Adamsburg, Grapeville, Greensburg, Blairsville, Black Lick, Homer City, Indiana, Penn Run, Pine Flats, Garman's Mills, Barnesboro, Spangler, Carrolltown and Altoona.

With only a run of 135 miles to Kansas City, you might make a late start from Morrill and plan to get into Kansas City that night. It will take you two days to cross Missouri, then Terre Haute can be reached the fourth night, Columbus, O., the fifth, and possibly Pittsburgh the sixth, but this distance is 250 miles and in all probability Wheeling, W. Va., will have to suffice, and making the last day's run 181 miles.

TRIP TO GALVESTON, TEX.

Nevada, Mo.—Editor Motor Age—Kindly advise the best route from Nevada to Galveston, Tex. I would prefer to go down the M. K. and T. if possible. The Blue Book does not seem to cover this territory.—W. F. Norman.

Your best route lies through Milo, Sheldon, Lamar, Boston, Jasper, Carthage, Neosho, Pineville, Hiawassa, Centerton, Bentonville, Rogers, Lowell, Springdale, Johnson, and Fayetteville, 186 miles. To Carthage the road is part oiled and part macadam, but from Neosho to Fayetteville, about 84 miles, you have a variety of macadam and dirt and through some flint hill country, but there are no bad grades or bad streams. En route for Winslow you cross the Boston mountains and the only grade of any note. At Vanburen cross the river on a fine bridge and go into Fort Smith, being 62 miles from Fayetteville. The Fort Smith-Little Rock section of the journey is through Charleston, Paris, Dardanelle; cross the Arkansas river to Russellville, Pottsville, Atkins, Morrelton, Plumerville, Wooster, Conway, Palarm, and Little Rock. Plumerville to Conway by way of Wooster is a distance of 10 miles out of the way, but this has been done to avoid

to Pacific Coast Average $4 a Day

Wyo. we had to make a detour north on the Oregon short line to Opal and back to Evanston through Cumberland, a coal mining town.

From Evanston to Ogden, Utah, was a good road, all down grade. We camped in the Weber canyon at a most delightful spot, near the Devil's Slide.

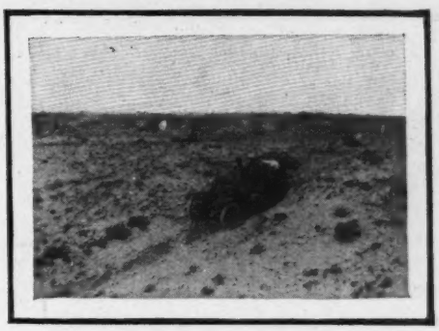
From Ogden we went north through Brigham City and Corine and then made a detour to Snowville, 6 miles from the Idaho state line, in order to avoid the alkali flats along the north shore of Great Salt lake. The price of gasoline had gradually climbed up from 25 cents west of Kearney, Neb., to 35 cents through Wyoming and 40 cents at Snowville. We followed a southwesterly direction to Kelton, the Southern Pacific to Lucin and on into Nevada. We camped at Cobre, and Elko, went through the old mining town of Eureka, west to Austin, another old mining town, northwest to Fallon, the headquarters of the Truckee-Carson government irrigation project, passing the new mining camps of Fairview and Wonder, and then from Fallon to Wadsworth, and Reno over good hard mountain roads with some 10 to 25 per-cent grades. These roads were appreciated after having a few weeks of sand and alkali. We shortly crossed the state line on a good hard road, heavy grades and short curves, passed Truckee and camped at Donners Lake a beautiful sheet of water near the summit of the Sierras. We crossed the summit through a snow shed which covers the Southern Pacific tracks from Truckee to Emigrant Gap a distance of 30 miles. This was July 5 and snow was all around us, not in a solid mass, but big banks of it. To Auburn it is all down grade with the ever present sharp curves and there is hardly any use for a motor in the car. At Folsom a fine paved road runs into Sacramento, from which town we routed through Stockton, Janney, Livermore, to Oakland on fine roads, from Frisco to San Jose past Stanford University at Palo Alto, from San Jose up over a spur of the coast range with heavy grades and short curves, through Salinas, Paso Robles, San Luis Obispo, then following the ocean up over another mountain range, and again in sight of the ocean for 20 miles before reaching Santa Barbara. A fine boulevard leads out of Santa Barbara for 10 or 12 miles, then comes the Casitas mountains with very heavy grades and more sharp curves and Ventura where we camped. The next day we made Los Angeles about noon.

The utmost courtesy was shown us all along the way. There are perhaps 250 cars making the overland trip a year, and there would be many more if the people who own cars and have the time knew how thoroughly they would enjoy the trip and how little the troubles would seem after they get started. At any rate, it is a school of instruction in repair work for the owners.

Our expenses were about $12 a day for the three of us. This included our tires, gasoline, oil, repairs and an occasional meal and lodging. A cheaper vacation cannot be imagined.—W. P. Roberts.

HIGH CENTERS CROSSING NEVADA

NEAR THE SUMMIT OF THE SIERRAS



100 MILES FROM WATER

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the Caddo bottoms, which, it is understood, are impassable about two-thirds of the year.

Little Rock to Dallas can be followed in the Blue Book No. 5. To Texarkana it is 192 miles and mostly good gravel road through Collegeville, Benton, Fairplay, Lonesdale, Hot Springs, Lawrence, Social Hill, Friendship, Arkadelphia, Dobyville, Okolona, Boughton, Prescott, Emmet, Hope, Fulton and Homan. Then to Dallas, 217 miles, a good road is through Leary, Hooks, Boston, De Kalb, Annona, Clarksville, Detroit, Blossom, Paris, Brookston, Hightown, Petty, Honey Grove, Windom, Dodd City, Bonham, Whitewright, Pilot Grove, Sedalia, Anna, Melissa, McKinney, Plano, Richardson and Dallas.

Continue through Lancaster, Red Oak, and Waxahachie and follow the routing given to the Rocky Ford, Colo., inquiry, and from Houston go through Genoa, Webster, Dickinson and Lamarque; or, if you do not care to include Houston, upon reaching Richmond, head through Manvel and Alvin.

WISCONSIN ROAD CONDITIONS

Although the Blue Book car a little later in the year will cover a route between the Twin Cities and Duluth, the following information may be of considerable help to people who are planning this trip during the next month or so:

Starting from Seventh and Robert streets, St. Paul, go down Seventh street as far as Bradley; turn left on Bradley, following brick pavement out to Payne avenue; follow Payne avenue to end of pavement, turning left one block to Edgerton street, following same out on straight line of telegraph poles to Centerville, keeping to left-hand road at any intersecting roads in this distance. At Centerville turn to right at lone saloon, go west ½ mile and turn to left, following poles leading north; this brings you through Lamphrey's famous duck and Clear Lake. One-quarter mile beyond Clear Lake turn to right and follow road into Forest Lake. This will give you the best road as far as Forest Lake and eliminates nearly 20 miles of heavy sand road that in the past has been taken by most St. Paul-Duluth cars, namely, route through Hugo and White Bear. This new route is not through either place.

At Forest Lake turn north at drug store, follow road 1 mile and turn to left at intersecting roads near group of red buildings, following this road direct to Wyoming.

At Wyoming follow road straight through town and follow poles and Northern Pacific railroad tracks through Stacey to North Branch. This will be found to be the farthest between stations of any part of the trip and care should be used at any intersecting roads to work toward the Northern Pacific track. There is, however, only one turn that might be confusing and if these directions are followed no trouble will occur.

At Bush City follow right out of town on right of Northern Pacific tracks; 2 miles north turn to right toward Northern Pacific; turn north and follow poles to Rock Creek. At Rock Creek go across the Northern Pacific tracks ¼ mile and turn north on first road following straight into Pine City. At Pine City cross over the Northern Pacific tracks to the wagon bridge and take road to north, following poles into Hinckley; it will be difficult to get off this road if started over wagon bridge across river.

At Hinckley turn to left through town and take first road toward north; this will be street on which Mortenson's general store is located; follow this road until coming to railroad tracks; turn at railroad tracks and follow poles along tracks due northeast into sandstone. Sandstone is generally regarded as half way point and dinner taken there.

Going out of Sandstone cross track, take first road to left and follow same; take first road with poles leading back toward the Northern Pacific tracks. This road will bring you out at Finlayson, which road can be followed directly along tracks into Rutledge. At Rutledge cut across town indicated by sign board and follow road until cross river in thick woods. Take left-hand road on other side of bridge, following same into Willow river. This road will be followed directly by poles through Sturgeon Lake into Moose Lake; follow through town to Barnum. At Barnum go across foot bridge and turn left northward at corner store. This road will be followed direct, no turns, directly through Mahtowa, Atkinson into Carleton.

At Carleton turn into town and take road going north at bank corner, bringing you through Thomson, where at end of bridge over St. Louis river turn to right two blocks and turn north at store without crossing tracks. Follow telegraph poles and turn to right where any doubt exists directly into Duluth. Come down exceedingly steep Carleton hill onto Grand avenue, where street car tracks can be followed into city.

Sand roads will be found between Wyoming and North Branch, between there and Pine City mixture of sand and clay, and between Hinckley and Sandstone fair sand road. From Sandstone north a good road will be found.

Cadillac to Saginaw and Bay City.—With a view of getting a more direct connection between the resort section in northwestern Michigan and Detroit, the Blue Book car spent considerable time going over the various possibilities and found that although the following route is not the best, it is perfectly passable and considerably better than some of the very sandy sections near Lake Michigan. From Cadillac the route goes to Lucas, then to McVaine, Avondale and Evart, thence to Barryton, Sherman City, Beal City and Mt. Pleasant. This stretch is fairly good although there are a few rough spots. The direct connection to Bay City would be via Midland, but this was found to be practically impassable. It is recommended to go via Shepherd, Forest Hill and St. Louis. From this latter place the going is almost straight east into Saginaw; considerable gravel or macadam on this last stretch.

High Compression Status

Disadvantages Outweigh Advantages of High-Pressure Motors at Present Time

ST. LOUIS, Mo.—Editor Motor Age—Will Motor Age explain why motor car builders keep the engine compression so low. I have always thought that the higher the compression the greater the explosive power. Am I wrong?—E. Rozier.

The compression of motor car motors is kept below a certain maximum mainly because of the difficulty of cooling and lubricating a high-compression motor, and because of the added weight necessary to withstand the greater internal pressure of a motor of this type. There can be no doubt that an increase of compression means an increase of combustion pressure in a gasoline motor, but it is also to be remembered that increased heat in the combustion chamber makes lubrication very difficult, and with an explosive charge of equal volume at atmospheric pressure, the heat generated in combustion is increased in intensity four fold with a compression of one volume. Thus in a 4 by 4-inch motor, if the normal compression at the top of the stroke is 50 pounds, a decrease of compression volume of 50 per cent, see Figs. 1 and 2, means an increase of compression of 100 per cent or making the total compression 100 pounds. The increase of heat of 100 per cent makes the need for oil twice as urgent so that the same amount used at 50 pounds, if used at 100 pounds is only half enough, and so it is burned twice as fast because of the doubling of the heat. The result is that a decrease of compression volume of 50 per cent involves a loss of 75 per cent of

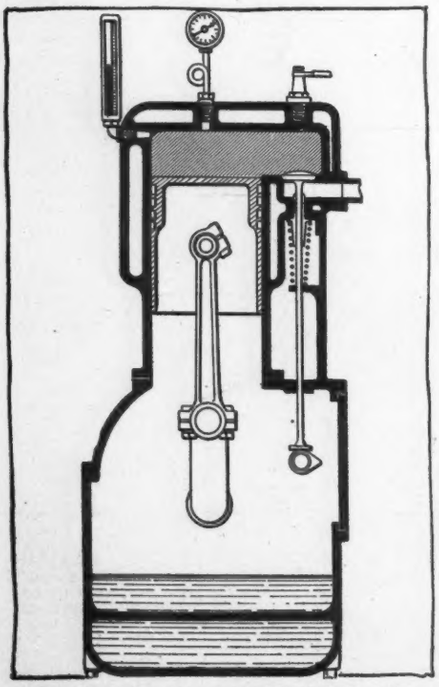


FIG. 1—NORMAL TEMPERATURE AND COMPRESSION

The Readers

Cooling and Oiling Troubles Against the Development of High-Pressure Motors—Engineer Advances Opinions on Crankshaft Design

lubrication. Not only this, but the increase of heat makes cooling four times more difficult, because the area of the walls of the combustion chamber is decreased ½, while the heat to which they are subjected is increased two fold. Thus it is seen that to provide an adequate lubricating means, the volume of oil must be increased 150 per cent, with the same form of jackets, the water circulation must be increased 100 per cent in speed, or with the same speed of circulation, 100 per cent in volume, and 100 per cent more radiation surface must be provided. The weight of the motor will be greatly increased, as the strength of the parts must be increased 100 per cent.

The objections to high compression do not end here, even, as with the higher compression in the cylinder, spark timing becomes extremely difficult, preignition being a strong tendency, and the seriousness of carbon deposit in this connection is increased four-fold. In electrical ignition, the current tension must be increased 100 per cent to resist the corresponding resistance at the sparking points of increased pressure. This increased spark intensity means that the sparking points come in for more rigorous service requirements, and must be made larger in size and of a material capable of withstanding the greater heat of the spark.

Another point of utmost importance is in starting difficulties. To turn over a high-compression motor, additional mechanical appliances must be provided to overcome the compression, electrical starters would have to be twice as powerful as at present, which involves grave difficulties. Compressed air starters would require a volume and pressure of air that would cause them to be extremely bulky, heavy, and even dangerous. Spring starters would be out of the question, and the danger of gas starters would be greatly enhanced by the high compression; and the shock of the explosion at such high pressures on the stationary pistons would probably be too much for the strength of any motor light enough to be at all practical for motor cars.

Another drawback of great severity is the expansion and contraction of metals. The great heat within the cylinder contrasted with the reduced heat on its exterior would involve terrific internal strains on even an externally machined and ground cylinder of annealed steel, and valves of any description would have their present tendency to warp increased to such an extent that valve trouble would be found one of the most serious with such an engine. The expansion and contraction of the piston would be so great as to involve variances of piston pressure which would present almost insurmountable obstacles to proper lubrication.

In spite of all these difficulties, however, designers, from time to time have been inspired to attempt the solution of the problems involved, using oftimes machined individual cylinders, with external waterjackets, water-cooled pistons, valves in the piston, distribution of the charge by fuel injection, and vapor cooling arrangements. This subject is being widely agitated in France, where, in search of high-efficiency with light weight and simplicity, designers have experienced encouraging results in the development of long-stroke, small bore, moderately high-compression motors. This seems to indicate that the high-compression problem is not unsolvable, and that it is certainly an end worthy to be striven for. It is believed by some that the motor millennium will witness the perfection of a motor with this principle developed, and

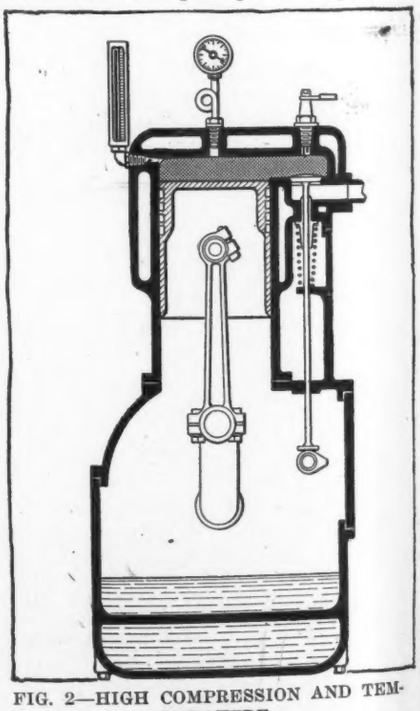


FIG. 2—HIGH COMPRESSION AND TEMPERATURE

Clearing House

Motor Misses When Spark is Advanced—Adams-Farwell is Last of the Mohicans—Cole Electric System Illustrated for Buckeye Reader

that designers are only confessing a weakness in adhering to the low-compression type, which is so responsive to development; but whose scope of efficiency is so limited. Others contend, to the contrary, that high compression is a feature that is meritorious in theory alone.

REVOLVING CYLINDER MOTORS

Pine City, Minn.—Editor Motor Age—What is the reason revolving cylinder motors are not used in motor cars? Is any one holding patents so as to prevent anyone from using them, or are they not a success?—E. W. Splittstoser.

Motors of this type have been tried out in motor car practice, but were abandoned after short experience. The Adams-Farwell car of Dubuque, Ia., uses a motor of this type, and is probably the only car manufactured using a revolving cylinder motor. This type of motor is not convenient for motor car work because of the great space it occupies, the fact that it is inaccessible for adjustment when running, and the gyroscopic action which it exerts, and which affects the steering and is apt to cause serious skidding. Their only use to any extent at the present time is in aeronautical work.

WANTS TWO-CYCLE EXPERIENCE

Grinnell, Kan.—Editor Motor Age—I have been reading with considerable interest the argument presented through Motor Age by a few men, as to the relative merits of the two and four-cycle motor car engines. While I know nothing of the two-cycle engine so far as personal experience is concerned, I do claim to know considerable of the shortcomings of the four-cycle engines, as I have run a motor car with a four-cycle, four-cylinder engine upwards of 13,000 miles. I have had very nearly all kinds of trouble known to four-cycle engines and it is my opinion that a two-cycle engine is superior to a four-cycle engine, providing a person gets a two-cycle engine without crankcase compression.

Agents or dealers handling the four-cycle machines will not give a person an answer as to why the four-cycle machine is superior to the two-cycle. They simply say that all manufacturers, with a few exceptions, make the four-cycle, consequently, they are superior to the two. To some of the people, I presume that an answer of this description is all that is necessary, but it will take considerable argument to convince me that the two-cycle machine is inferior. I would be pleased to have the owners of two-cycle cars give me their experience with their machines and also answer the following questions:

1—Does the engine clean readily running at high speed?

2—Are the engines bothered with overheating when working hard?

3—Does carbon or other deposit bother in the cylinders so that the engine has to be taken down every 500 miles and cleaned?

4—Will a 30-horsepower, two-cycle engine use much more gasoline than a four-cycle engine in the same conditions?

5—I have been told that the gasoline and gas coming in contact with the lubricating oil in the cylinders will cut it so that it will not properly lubricate the cylinders. Is this so?

6—Another objection to them, I have been told, is that they are exceedingly hard to start in cold weather.

7—Are they as speedy as the four-cycle engines?—A Subscriber.

DELCO DIAGRAM DEMANDED

Cleveland, O.—Editor Motor Age—I am told that the Cole car for 1913 is to be equipped with the Delco electric lighting, starting, and ignition system. Is this true, and is the system used similar to the Cadillac? Please submit a diagram of the main circuits.—Buyer.

You are correctly informed. The system as used on the new Cole models is similar to the Cadillac system, but not identical. The wiring diagram is shown in Fig. 3 and was explained in detail in the description of the Cole cars for 1913 in Motor Age, September 19, 1912.

Runs Only On Retard

Maxwell Motorist Finds that Magneto Does Not Work in Advanced Position

ALGOMA, Wis.—Editor Motor Age—We have a Maxwell, model Q 11, which will not fire under an advanced spark. The engine runs well on the battery and also on a retarded spark, but when the spark lever is moved to advanced position the motor dies. We suspect condenser trouble. What is the cause of the trouble?—Haney-Gasper-White Co.

Among the possibilities that may be eliminated as probabilities in this case is first of all the condenser. Trouble with this member, or any other coil part, except the vibrator, would result in a poor spark in any degree of advance, as the advance does not affect the strength of the current, so that condenser trouble would make itself manifest at all degrees of advance.

Since you say that the motor runs well on the battery, and interpreting this to mean in advanced position, the trouble must lie in the magneto circuit, and cannot be the result of carbureter trouble, which would affect the battery ignition and magneto alike. The magneto must be in generally good condition, or it would not produce a good spark in retard. You do not state the make of magneto, so it is hard to say whether or not the trouble is in the circuit-breaker.

It often happens, however, that with some makes of magnetos worn platinum points will contact on time in retarded position, but late or not at all in advanced position, cutting into the circuit on the weak portion of the cycle, or not at all. Your magneto may be out of time, so your spark is too early, being in normally advanced position when the lever is set for retard, and advanced too far past dead center on the advanced position of the spark lever. This, however, would cause the motor to backfire in advanced position, and probably back-kick on being cranked. A broken connection at the distributor may cause the trouble, the broken ends contacting

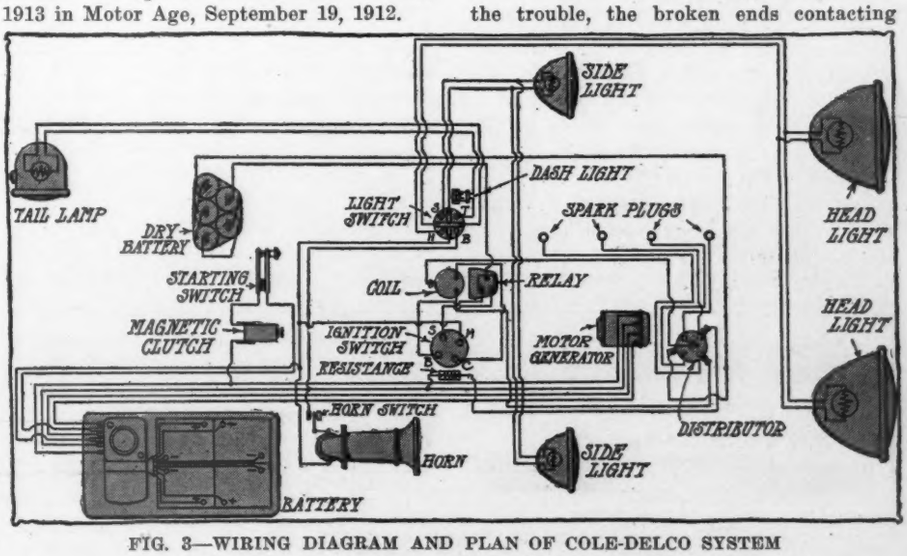


FIG. 3—WIRING DIAGRAM AND PLAN OF COLE-DELCO SYSTEM

when the distributor is turned to retard, but separating when moved out of this position.

Worn or fouled insulation on the distributor connection may produce a short-circuit or ground by being brought together in advance, but being separated on retard. It may be that your magneto is adjusted to produce too heavy a spark, that is excellent for starting, but has too much lag for advanced running. This is caused by over-induction, increasing the intensity, or voltage of the spark, but cutting down its speed or amperage. It may be possible that the starting button on the coil, if the latter is of such type, is in permanent contact, producing a starting, or too heavy a spark constantly, with the above results.

In case the condition, contrary to the wording of the query, obtains alike under either battery or magneto ignition, the cause may be any of the above in combination with stiff vibrator springs, which also produce a spark of excessively high-tension, or weak valve springs, which allow of the return of the valves to their seats at low speeds, but have not sufficient energy to seat them between turns of the cam at the higher speeds that result from an advanced spark. The trouble may also be a plain case of a poorly adjusted carbureter.

Your carbureter may feed too much gasoline for high speeds. Modern carbureters have different adjustments, viz.—for high speed, for low speed, and on some, for intermediate speeds. These should be thoroughly studied before attempting any actual adjustments, and then each adjustment made at the respective speed intended. An over-rich mixture will run the motor fairly well on low speeds, but will choke up the engine on high speeds. It will give very little power on any speed, and will overheat and carbonize the motor.

DESIGNING COMPRESSION CHAMBER

Eagle Lake, Tex.—Editor Motor Age—How large should be the compression chamber of a 4 by 4½-inch motor, of the L-type? I would like the measurement in cubic inches.—A. Hansel.

The compression space in the ordinary motor is about one-third of the piston displacement. The piston displacement of a 4 by 4½-inch cylinder is 56.52 cubic inches and the compression space should be one-third of that or 18.84 cubic inches.

If the valves are side by side, the valve pocket will be slightly greater in volume than if they are superimposed, and hence the height of the compression space must be correspondingly less.

Balancing of Crankshafts

Centrifugal Force Exerts an Influence in Causing Motor to Rock, It Is Contended

DETROIT, Mich.—Editor Motor Age—Referring to Motor Age's answer to the questions of one of its subscribers on page 29 of the October 3 number, relating to a special crank arrangement for a four-cylinder four-cycle engine, I would like to correct some of the statements.

Motor Age explains that the subscriber's proposed crank arrangement, which has 180 degrees between each succeeding crank, is not practical because it would result in a bad balance, due to the necessary firing order. The two subsequent explosions of numbers 1 and 2 and numbers 3 and 4 cranks would cause the motor to vibrate, as the explosions are not evenly distributed along the crankshaft, but always occur at the same end of the motor. I cannot agree with this statement and do

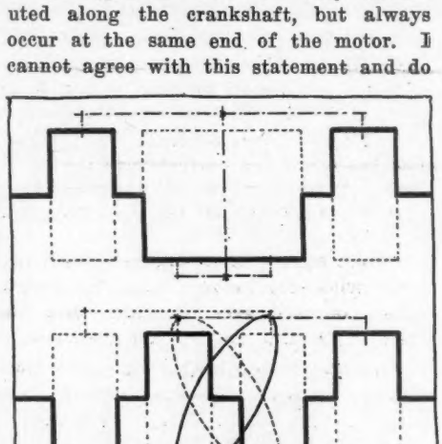


FIG. 5—BAD BALANCE OF CRANKSHAFT WITH ALTERNATE THROWS

not believe that the motor will vibrate more on account of the firing order than otherwise, as you also state the same thing about a six-cylinder motor where the firing order 1-2-3-6-5-4 shows no increase of vibration over one wherein the firing order is broken up and distributed, as in the sequence 1-4-3-6-3-5, along the crankshaft.

The unbalance of the engine with the suggested 1-2-3-4 firing order is due to the necessary crank arrangement which results in a much poorer balance than the regular four-cylinder four-cycle crank arrangement. It is well known that the four-cylinder two-cycle engine is more poorly balanced than the same size four-cycle engine, due to its peculiar crank arrangement, and this suggested crankshaft for four-cycle engines would vibrate about twice as much. The two above-mentioned six-cylinder arrangements use the same crankshaft and therefore there is no difference in vibration due to crank arrangement, and as experience shows, the firing order does not influence the balance. In the four-cylinder arrangement suggested by your subscriber, the crankshaft has to differ from the one used regularly on four-cycle four-cylinder engines, and, as stated above, it is very much out of balance. Therefore I do not agree with your assumption that now, when the component parts of the motor are better balanced than some years ago, some makers will adopt this type of crankshaft. —Ernest R. Fried, research engineer, General Motors Co.

Interpreting this criticism as implying that the differing paths of centrifugal throw, as shown in Fig. 5, are more responsible for poor engine balance with the type of crankshaft shown than the teetering effect of the undistributed firing order, Motor Age must inquire of Mr. Fried by what process of calculation he concludes that the centrifugal force of the cranks is a more powerful influence against proper balance than, say, a 20-horsepower blow upon the crankshaft alternately at opposite ends on each engine cycle. That a 125-pound crankshaft in improper centrifugal balance would exert a more destructive vibratory influence than improper application of the full power of, for instance, a 40-horsepower engine, seems a trifle odd.

Again, in regard to the balance of a four-cylinder two-cycle motor. Motors of this type, when properly designed, have the established reputation of being greatly superior in running balance to four-cycle motors, due to the fact that there are four separate impulses on each revolution of the crankshaft, instead of but two, as with the four-cycle type. As to using a four-cylinder two-cycle crankshaft in a four-cylinder four-cycle motor, Mr. Fried must understand that such a thing has never been contemplated, because of the four-cycle action. If so used, it would be found that instead of the explosions occurring in the sequence shown at the top, Fig. 4, they would occur as at the bottom, resembling a lope, which of course would destroy all running balance, in the same manner as the balance of a two-cylinder opposed motor is destroyed if the same crank is used for both cylinders, as in Fig. 7.

In regard to the observation concerning six-cylinder motors, the statement regarding crank angles is right, but this example was taken from the observations of a prominent manufacturer on this subject, to illustrate his opinion that unbalanced firing orders had no effect on a perfectly balanced six-cylinder motor and made no reference to crank angles.

In fairness to Mr. Fried, it must be admitted that a crankshaft like the lower, Fig. 5, is very much out of running balance at high speed, due to the wavering lines of the path of centrifugal throw.

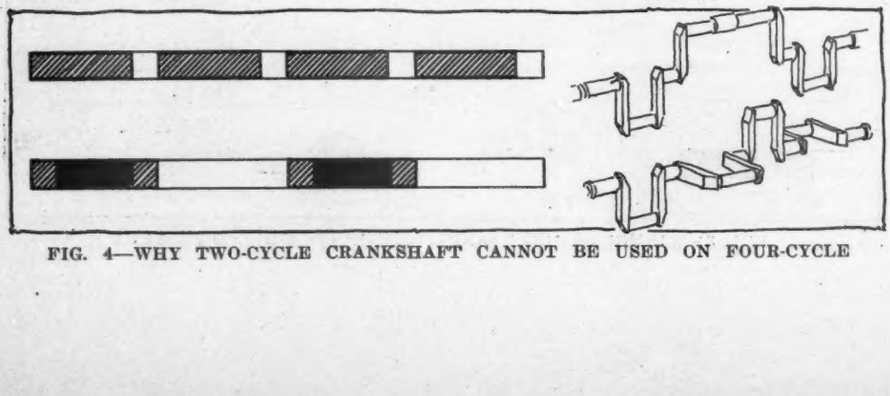


FIG. 4—WHY TWO-CYCLE CRANKSHAFT CANNOT BE USED ON FOUR-CYCLE

Fig. 5 explains this difference. The center of centrifugal thrust, of the respective throws, as shown by the brackets, coincide in a standard crankshaft. With an alternate-throw type they do not; hence the center of thrust on a given side varies as shown by the ellipes.

This, however, is not, in the estimation of Motor Age, to be compared to the effect in this direction of first subjecting one end of the crankshaft to a downward strain of one-half the total power of the engine, and then the other end with a similar strain.

ANTI-FREEZE FOR GAS GENERATORS

Gaylord, Minn.—Editor Motor Age—1—How does one reset the season's mileage back to zero on a Stewart speedometer?

2—Is there any compound I could put in the radiator to prevent it from freezing? If so, what proportion?

3—Would the same compound answer for acetylene gas generators?

4—Would benzine, if fed to a motor, give as much power as gasoline. What effect would it have on the motor?—A Reader.

1—There is no provision for this, and the machine must be returned to the factory to be reset. Turning it backward will only add in the same manner as going forward.

2—The best solution to prevent the water in the radiator from freezing is a mixture of alcohol and water. The proportions for various temperatures that have been found most satisfactory are given below:

For 5 gallons of solution:

Degrees Fahr.	Ingredient.	Gallons	Quarts	Pints
15	Water	4	..	..
	Alcohol		2	..
	Glycerine		2	..
8	Water	3	3	..
	Alcohol		2	1
	Glycerine		2	1
-10	Water	3	..	1
	Alcohol	1	1	..
	Glycerine		2	1
-20	Water	1	1	..
	Alcohol	2	2	..
	Glycerine ..	1	1	..

3—For this use plain alcohol is advisable in the proportions given below. Alcohol is a fuel, but not explosive. It will therefore probably give a slightly stronger gas than water, and for this reason less will be required. Do not use glycerine, as this is an explosive.

Percentage of alcohol in water:

At 18 degrees.....10 per cent
At 5 degrees.....20 per cent
At -2 degrees.....25 per cent
At -9 degrees.....30 per cent
At -15 degrees.....35 per cent
At -24 degrees.....40 per cent

4—Benzine has been found an ideal motor fuel in all respects except that starting in cold weather is sometimes difficult. The use of benzine requires the most advanced forms of carbureters, preferably water-jacketed, and using warm air. In cold weather, it is advisable to use gasoline for starting, changing to benzine when the motor is warmed. It has been found to produce, under proper conditions, greater mileage per gallon than gasoline.

Timer Overheating Cause

Reader Gives Experience on Cooling With Mitchell that Overheated Badly

CINCINNATI, O.—Editor Motor Age—Having obtained considerable information from these columns, I feel that a recent experience of mine may not be amiss and may aid some mystified and inquiring reader.

Some time ago I noticed that the water in the radiator of my Mitchell touring car heated and boiled on the slightest provocation, and that on some grades, even when running on high, the water would boil and the engine get hot so that

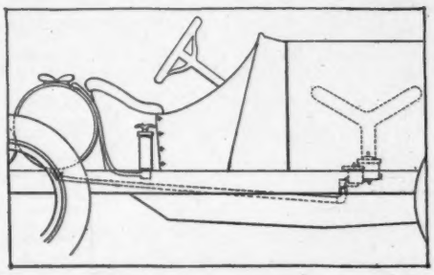


FIG. 6—COMBINATION FEED ON FIAT CAR

I would have to stop and cool it off and refill with cool water. I had the circulation examined even to dismantling the pump, but could not find the trouble.

One day I noticed that the lever regulating the timer seemed to fly back of its own accord, and, upon investigation, found, first, that the timer in some manner had become jammed and would not work either way; second, that the rod running along the steering post had on it at the lower end a set screw, which had become loosened and with the result that when I threw the lever to advance the spark, the set screw being lose and timer jammed, nothing moved except the lever itself, with the result that the engine was running at all times on retarded spark, which was sufficient to cause it to heat. Thirty minutes' work taking off the timer, oiling it and tightening the set screw, set everything to working properly, and I have had no heating trouble since.

Another point which I have learned concerns the Splitdorf system of ignition. For some time I experienced considerable trouble and expense replacing dry cells, which, as soon as connected, seemed to run down very rapidly. After buying several sets of batteries, and trying a number of experiments by packing in asbestos and other insulators, I was informed by one of the trouble men that almost every Splitdorf coil had some leakage and that by installing on the dash—a place handy to the driver—between the coil and dry cells a double-knife switch, whereby, as soon as the car was cranked and the regular switch thrown to the magneto, then the knife switch could be thrown, cutting out the dry cells, the leakage would stop, and my troubles ended. I installed the switch as directed, and my last set of batteries have lasted over 6 months.—W. J. Carey.

SUGGESTS FRICTION DRIVE

Jacksonville, Fla.—Editor Motor Age—As a subscriber to and constant reader of Motor Age, I have been much interested in the discussion of the gear-change question, which has for some weeks past appeared in these columns and anent which some very able arguments have been contributed for and against the four-speed gear-set.

From these articles, as well as from personal observation, I gather that there is no little abuse of the motor, when hard pulls are encountered, through the disinclination of the operator to change speed ratio, either from what may be justly termed pure laziness, or from the other consideration that gear ratios are not suited to the conditions of the pull; being too low,—allowing the motor to race, with its very unpleasant vibration, noise and tendency to overheat—or too high, dragging the motor unduly, the injurious effects of which are undisputed.

It has occurred to me that these earnest gentlemen are—in their search for improved conditions in this matter—overlooking, although putting up a rather strong argument for the much despised friction transmission, in which type there is an unlimited number of speed ratios, from which the operator may select such one as the conditions, his experience or his inclinations may dictate and to which he may resort instantly, with a minimum of effort, without changing throttle or rating his motor, and, what is of further advantage, without losing anything from the momentum which his car has when change is made.

I am not a dealer in cars of any type, but have had ample experience with both geared and friction transmission, and cannot forbear offering the above suggestion, at this time, when the discussions appearing makes it opportune.—J. N. Merrill.

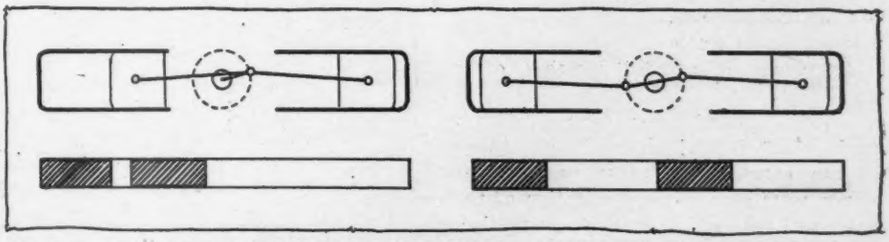


FIG. 7—ANALOGY OF TWO-CYCLE CRANKSHAFT TO SINGLE-THROW OPPOSED TYPE

The Motor Car Repair Shop

To Open Pet Cocks

WHEN a petcock or priming-cup valve, which is designed to be operated by the fingers, requires the use of a pair of pliers to open or close it, the valve V, Fig. 1, should be removed and oiled, or the retaining nut N loosened or both.

As shown in the section of Fig. 1, the valve of a petcock is tapered, and it is held in its tapered recess by the retaining nut N. Very often a coil spring G is provided to hold the valve into place tightly enough to prevent leakage and at the same time render it easily operative.

When the valve with a spring G cannot be moved with the fingers, a sharp tap with the wooden handle of a screwdriver or the like, in the direction indicated in Fig. 1, will in the majority of cases loosen it up so that it will turn freely. On the other hand, should the valve leak or turn so freely as to jar open when the motor is in operation, a light tap in the opposite direction will drive the valve more tightly into its recess and thereby make it more secure.

If the valve has no spring G but only the nut N, it may be loosened or tightened in the same way. However, should one find that in trying to loosen the valve, it does not respond to one or two sharp taps in the direction indicated in Fig. 1, then the nut N should be loosened a couple of turns and the valve again tapped sharply. Should the valve tend to jar loose the nut should be tightened.

In tightening a valve-retainer nut N one sometimes is apt to find that it turns very hard, or refuses to be tightened. If a reasonable amount of effort fails to tighten the nut, do not put a greater strain upon it, for the threaded end of the valve most likely will be twisted off and the valve spoiled.

When the nut cannot be tightened readily, remove it and see if the end E of the valve, Fig. 2, is not flush with the side S of the cup body in which case the nut or washer W, if there be one, would bear directly upon the end E of the valve, instead of upon the portion S of the cup body. In such a case the valve V should be removed and a little metal filed off or turned off in a lathe as indicated by the dotted lines L. This will permit the valve to be more tightly drawn into place when the nut is tightened.

Inspect New Cars

At a recent agents' meeting of a prominent motor car concern, there was a strong demand from the agents for more attention to the finish and details of the cars' construction; or in other words, more care in the application of the finishing touches and final inspection. The general complaint was that very often a car would come from the factory, with a few nuts loose or missing, insufficient oil in the transmission or axle, dirty oil in the motor, bearings too tight or too loose, carbureter out of adjustment, and a number of other little things of this nature which gave the agent considerable trouble.

Hints for the Amateur

It was stated by one conscientious agent that he never turned a new car over to its owner without first having his repairman thoroughly inspect and adjust it. Another, however, complained that owing to the usual delay in deliveries, his customers were so impatient and anxious to get their cars, that he had no time to inspect and adjust them, and consequently much trouble ensued.

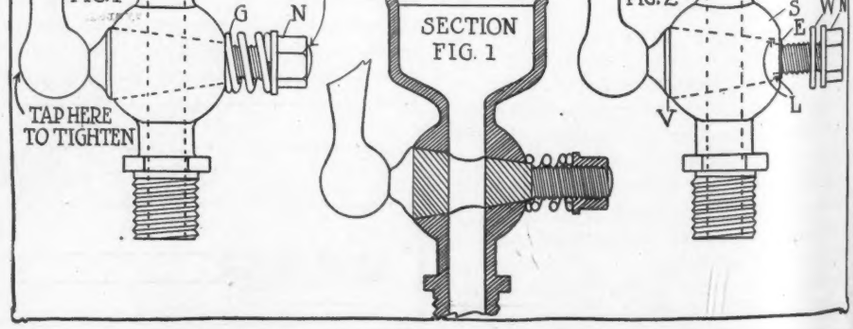
Of course, the factory officials promised a more careful final test, but the agent who continues to give his new cars a final inspection, and adjustment if necessary, will no doubt find his business more pleasant and profitable than the one who finds no time to do it.

The agent, who, on the arrival of a new car, tells his anxiously waiting customer that the car is arrived but being desirous of having it thoroughly inspected and adjusted, he will not deliver it until the morrow, will not be denied the privilage; for however anxious the motorist may be to get his car, he is even more anxious that everything be in first-class condition. Therefore, a request of this kind on the part of the agent, if honestly made and carried out, will not only bring the agent into closer and more pleasant relations with his customer; but the possible troubles prevented by these preliminary precautions will be eliminated and a satisfied owner born. It is a pretty generally acknowledged fact, that a satisfied owner is one of the best advertising and selling agents that exists today.

The agent, therefore, should co-operate with the manufacturer and insist on a new car's inspection, whether it needs it or not. The repairman or inspector should be conscientious in this work; and the owner certainly should be wise enough to see the advantages of granting the extra delay in a case of this kind.

Care of the Rims

Many motorists in changing rims have experienced the annoyance of the rusting of the parts to one another, of the tire to the rim, and of the threads on the turnbuckles, on those types where these are employed. The usual recourse in such a case is to condemn first the rim, then the maker of it, then the manufacturer who installed it on his car, and finally the tire that was so indiscreet as to stick to the rim. The tire is then usually put back on the rim, to rust still more firmly to it. Very seldom does one in such a predicament think of blaming himself for the trouble, and yet the fact is that a properly cared for rim, of any type, never will be found in this condition. They are made of steel, and steel by its very nature will rust, if not prevented from so doing. New rims are always sent out from the factory japanned and if kept so, never will give any trouble in this respect. But it is not always possible to procure a suitable japan for this purpose, and it always should be baked on. Japan, like any other enamel, will wear off in time, and if steps for prevention are not taken, the rim will rust. An easy way to prevent this is to heat the rim with a blow torch, and apply beeswax. This will form a new combination with the rust, which will prevent further rust forming. It perhaps will be advisable to renew the application of the wax as each tire change or renewal is made by the owner.



CONSTRUCTION AND ADJUSTMENTS OF PETCOCKS

The Motorist's Kindergarden

EDITOR'S NOTE—Motor Age is publishing in this department a series of non-technical explanations of the various parts of motor cars for the benefit of the reader who knows nothing about them. The subjects will be dealt with in the most elementary manner, so that the series when completed will form a simple elucidation of the car. The first article appeared October 10, 1912.

IN a general way, the motor is a shotgun in which a mixture of gasoline and air is exploded, instead of gunpowder. The engine cylinder corresponds with the gun barrel. It is fired by an electric spark instead of the trigger hammer; and instead of shooting out a load of shot it shoots downward a plug in the gun barrel or cylinder. This plug is called the piston and to it is pivoted one end of a steel rod called the connecting rod, the other end of which is pivoted to crank on a shaft which is called the crankshaft. When this charge of gasoline and air is exploded, the piston is driven down just like the bullet is shot out of a gun, and as it goes down it forces the connecting rod down which makes the crank turn. Of course the turning of the crank makes the crankshaft turn because the former is a part of the latter. Unlike the bullet, the piston cannot keep on going till it is clear out of the cylinder, for as the crank swings around, it forces the piston back into the cylinder ready to be shot out again. The motor is an automatic loader and firer, like the automatic revolvers, and after it is once started to firing it continues as long as charges of explosive are provided and the electricity for exploding them is supplied. Every time the explosion occurs, the piston is shot down again and the crank gets another whirl around. It is this turning of the crank that is utilized to turn other shafts and gears which run to the rear wheels and make them turn to drive the car, and which comprise the transmission system.

The transmission system includes, first, the clutch. This is usually immediately behind the motor and is often within the flywheel of the motor. The clutch is the connecting link between the motor and the rest of the transmission system by which the motor can be connected to drive the car or can at any moment be disconnected and allowed to run without transmitting any power to the rest of the machinery driving the car. With it the car can be stopped and started again without the necessity of stopping and restarting the engine. It is operated by one of the pedals, usually the one for the left foot. Pushing on this pedal throws the clutch out of engagement and releasing the pedal allows the clutch to engage so that the engine power is applied to the rest of the transmission system.

The next unit of the transmission system is the gearset, or gearbox, often called the transmission. The power developed by an engine is proportional to its speed of revolution; that is, the faster the engine turns the main shaft or crankshaft, the greater power it has. But in starting the car from standstill or in climbing hills the car must run slow; at the same time the engine must furnish the most power then to get the car under way or pull it up the hill. In order that the engine may run at high speed when the car runs slow, the gearset is put in the transmission line. It consists of two, three or four sets of gearwheels of different sizes, so arranged that

Uses of Car Parts

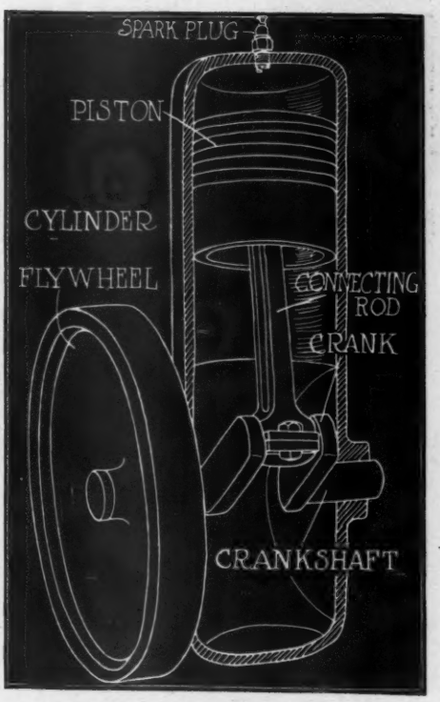


FIG. 2—THE MOTOR SIMPLIFIED

the different sets can be connected between the clutch and the driving shaft as desired. These different combinations of gearwheels simply change the speed at which the drive shaft turns while the engine is running at the same speed so that it is furnishing the same power.

To look at it in another way—power is the ability to do a certain amount of work in a certain time. With the same power we can do less work in a short time or more work if we take a longer time to do it in. It takes more work to start the car, that is to get it under way than it does to keep it going after it gets up to speed. Also, it takes more work from the engine to pull the car up a hill than it does to run it on the level. So, in order that the engine can do this extra work needed for starting and hill-climbing we let it take more time to it, but allow the engine itself to run just as fast so that it will develop the same power. That is what the gearset is for. The gearing in it lets the engine run just as fast but makes the driving wheels turn more slowly so that the engine can perform the extra work in starting and hill-climbing.

The different combinations of gearing are brought into play by means of the gearset control lever, or gearshift lever. In one popular make of car a pedal is used instead of the lever. On the high speed, that is, when the gearset is connected to turn the driving wheels the fastest, the end of the clutch shaft is connected directly to the end of the driving shaft so that none of the gears are in operation. This is called direct drive.

There is another function of the gearset which has not been mentioned so far; that is in reversing. You cannot reverse the running direction of the ordinary gasoline engine; so it is necessary to put in the gearset another combination of gears by which the direction of rotation of the driving wheels can be reversed to make the car run backwards without changing the direction of rotation of the motor. This usually is accomplished by another position of the gearshift lever.

The clutch also has an important function in gearshifting, because before we can change the gear combinations we must disconnect the engine from the gearset by letting out the clutch, and then letting it in again when the speed change has been completed. The gearset may be combined with the motor and clutch, either in the same metal housing or bolted to the motor and clutch case, in which case the combination is called a unit power plant. The gearset may be combined with the clutch or be entirely separate. If combined with the clutch it usually is under the footboard and if separate, may be under the footboard or on the rear axle.

From the gearset, the power is transmitted through a shaft, called the driving shaft or propeller shaft. If the car is shaft-driven, this runs back to the rear axle and on its rear end is a small bevel gear that meshes with a large one in the rear axle. If the car is chain-drive, this shaft is shorter and runs only to a cross shaft, called the jackshaft, from which either one chain runs to a sprocket on the rear axle, or chains to a sprocket on each of the rear wheels.

In the Realm of the Motor in Mountain Service

Six Speedwell Trucks Haul 10,000 Tons of Material for New Power Dam in California, Saving Contractors $70,000

THE Service Co of California with six 6-ton Speedwell trucks is hauling 10,000 tons of material for a new power dam, 26 miles over the Plumas mountains in one-eighth the time of horses and at less than half the cost, the job being undertaken under bond for its successful performance. The six motor trucks are taking the place of 270 horses.

The former cost of horse hauling was $13 per ton. The Service company is hauling for $7 per ton, saving the power company $70,000 on the job. The machines are in operation day and night making two trips per day each of 52 miles, carrying a full 6-ton load.

Motor trucks make the trip in 12 hours which formerly took horse teams 4 days to accomplish. Ten thousand tons of cement, reinforcing steel and general merchandise are being removed from Keddie, Plumas county, California, to a dam site at Big Meadows, 26 miles away, this being, it is claimed, the first time so large a quantity of material has been hauled at a contracted price, bond being given for satisfactory service.

By R. Harry Croninger

I ALWAYS have predicted that the introduction and use of motor trucks would affect such enormous economies, especially for large tonnage and long hauls, that it would tend to make power development and the handling of ore of various grades so possible and commercial, that in the very near future large-capacity trucks would be in operation in this class of work.

I have proven absolutely the practicability of this work by taking on the contract for moving about 10,000 tons of cement, reinforcing steel and general merchandise from Keddie, Plumas county, California, to the dam site at Big Meadows, a distance of 26 miles, and hauling out, approximately, 100,000,000 feet of lumber.

This work is being done for the Great Western Power Co., and when the dam is finished, will create the largest artificial body of water in the world. I claim this to be the first hauling contract of its kind, where the service company is under bond, that ever has been undertaken. The roads over which we operate are practically nothing more than mountain trails, widened out so that it becomes possible to use trucks on them, but the roads are without bottom or foundation. In the early spring we encountered the usual rains, which aggravated the situation and after the roads did dry out, they began to cut up and become full of deep holes, bad ruts and thick dust.

In going into the matter to handle this freight, I found out that the average cost

The illustrations on this page show the Speedwell Truck in Californian service. The top picture is a mountain scene, showing the fine roads; the second one is that of one of the eight-horse teams the motor truck supplanted, while the bottom one shows the interior of a tent that is used as a service station.

Commercial Car

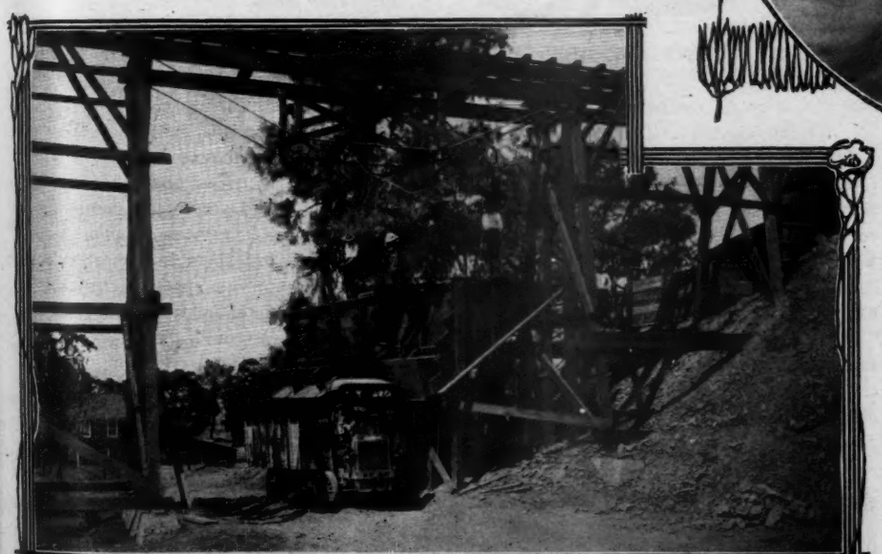
Better Than 270 Horses

Bond Furnished by Service Company and Results Show Task will Now be Done in One-eighth Time and Half Horse Cost

Ninety per cent of all the delays in service have been due to tire trouble, which is easy to understand when one looks at the accompanying illustrations and notes the 100 per cent overload thrown on the rear tires by the overhanging steel bars. If these could be put on the body sticking forward as well as back, bringing the center of weight where it should be, doubtless 50 per cent of the tire trouble now met with would be eliminated. One overload on a tire will start its disintegration, and hauling but one load in this fashion might spoil a new set of tires.

One of the most interesting phases of the work is the opposition met with from the local road authorities, in spite of the fact that much road work was done gratis by the contracting company.

The illustrations show some of the road conditions and the exceptionally good method for quick loading of cement. The workshop tent also is unusual and shows how well one can do with small equipment in making a really efficient repair shop.



The top illustration shows a narrow road between Indian Falls and Crescent Mills; the second one is an ore-loading bin used by the Calvaras Copper Co. of Copperolis, Cal., and the bottom one gives an idea of the loads carried by the Speedwell Truck.

of hauling same over this road by horse-drawn teams was about 58 cents per ton mile. It took the teams 4 days to make the round trip, and the approximate load carried per animal was 1,200 pounds, which soon dropped down to 800 pounds during the months of July and August. We are doing this work for about 9 cents per ton mile, this price absorbing additional drivers, helpers and mechanics.

The Great Western Power Co. was paying last season an average of $13 per ton. The Service company is taking the same contract for $6 per ton, hauling from Keddie to the dam, and $2 a ton hauling lumber from the dam to Keddie. Speedwell trucks make this round trip in 12 hours, carrying full capacity, including the time of loading and unloading. I figure that the six 6-ton trucks have displaced about 270 horses and forty drivers.

In leaving Keddie the trucks pass over two summits, each averaging 5,400 feet. They have one pull of nearly 3 miles which averages 9 per cent. The steepest grade encountered is a very short one of about 18 per cent, leaving Shoo Fly bridge. The road is very steep and the turns very sharp.

The handling of the cement was not a difficult task as we were able to get a full load in about 12 minutes and unloading the same in 7 minutes, but we had about 700 tons of 30-foot length reinforcing steel, which was most difficult to handle, but the trucks, being particularly adapted for carrying long lengths, that is a partial load, made it possible for us to move this.

It might be interesting to note here that the facilities for loading cement were most modern and unique. The cement was taken from the freight car, dropped in a chute which empties down in the cement house, the floor of the cement house was just even with the top of the side boards of the trucks and enabled three men to load from 120 to 130 sacks in an average of about 12 minutes. At the dam, the cement was usually dropped in a chute a distance of about 300 feet down in the canyon to a mixer house, or, if the mixers were not working, it was thrown in a cement shed.

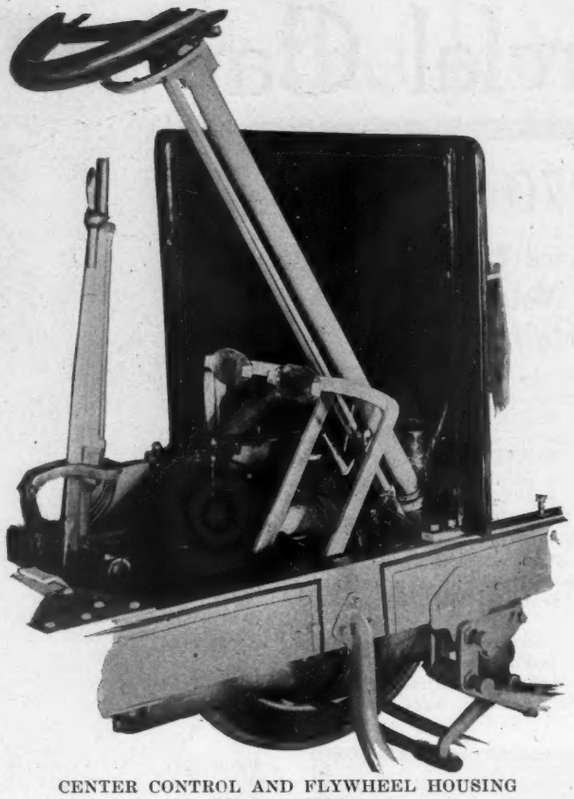
The trucks were originally fitted with rollers, fitted in the bottom of the body for handling lumber, but, after some experience we found it impossible to use these rollers from the fact that on account of the roads being so rough, we could not bind the lumber as a unit to make the rollers effective, in other words, no matter what care was exercised in tying the load, it would shift and come in contact with the side of the body, which prevented us from using the rollers. They were subsequently taken out of the body.

The greatest difficulty we experienced was with tires. We could not find any make of tires that would give us more than 2,000 miles on the rear wheels, and, in checking, carefully, our report for the month of June, I find that exactly out of 100 per cent hour's efficiency, 94 per cent of time lost was due to tire troubles and 6 per cent mechanical troubles.

The motor in the truck had ample power to carry the full 6 tons over these mountainous roads without any difficulty whatever. We found no indication of overheating, but, to be on the safe side, the drivers usually made it a point to replenish the water about half way over the route.

A very remarkable condition exists with us that in the use of the Schebler carbureter, even though at one point the trucks attain an elevation of 5,620 feet, it was not necessary to change the carbureter adjustment.

The Service company experienced a great deal of difficulty with the native of Plumas county, who first hindered us with a petition prohibiting the operation of the trucks on the roads. This was defeated at a meeting at the county seat. The next petition was to allow the trucks to run only from 6 P. M. to 6 A. M. This also was defeated after a long fight. The next petition was to allow the trucks to run from 4 A. M. and go to the dam, leave the dam at 4 P. M. and return to camp. This petition was finally defeated. The next steps taken was to put a large sign on each of the bridges, limiting the weight of the vehicle and load to 7 tons; this sign still appears, but the Service company is carrying its full tonnage weight nevertheless.



CENTER CONTROL AND FLYWHEEL HOUSING ON McINTYRE

The Service company was compelled to re-surface all of the bridges; and, in addition, spend about $2,500 on the roads, the county absolutely refusing to assist in any way. The service will continue until the snow comes in the fall, which ordinarily is about November 15.

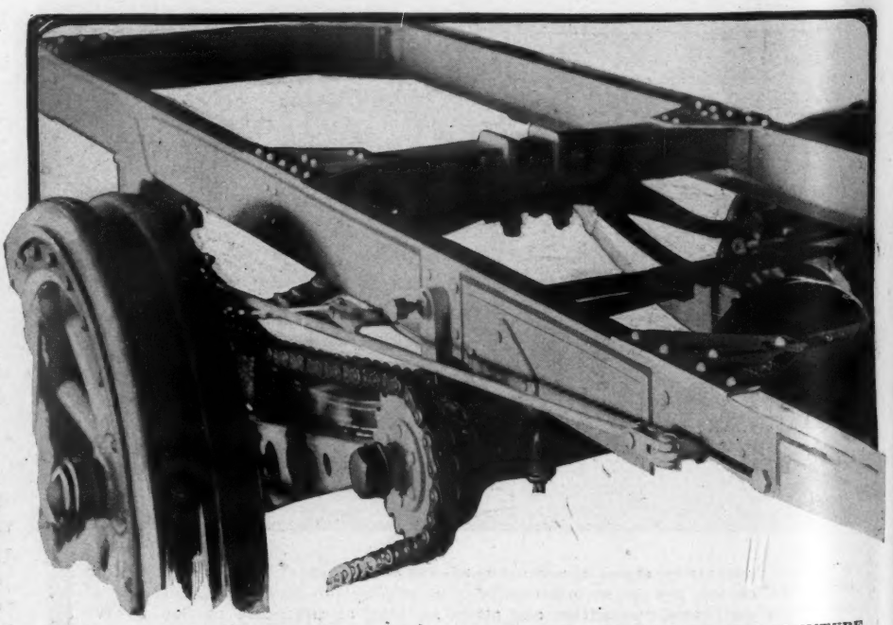
What has been gained and learned by this experience is of inestimable value to the Speedwell company. It has brought out what few weaknesses we had in the trucks and leads me to believe that if the trucks will perform on roads of this kind that they will perform satisfactorily anywhere.

The Speedwell camp at Keddie is composed of about twenty-five men. We use two drivers to a truck and operate the trucks day and night, only allowing such time as is absolutely necessary for the truck to go through the service department to put it in first-class mechanical condition before it leaves for its next trip. So far only two trucks have met with accidents. Truck No. 6 went over the cement platform at Keddie and turned turtle. After it was gotten right side up, the steering column was straightened and the engine turned over and the truck never lost a trip.

The next accident was to truck No. 3, which slid off the road and finally lodged against a tree about 40 feet down the bank. Where the truck went over it was practically a straight drop of 1,000 feet. It only took about half a day to get the truck back on the road, the steering column was straightened up and the engine started on the first quarter turn.

I have learned this much from this experience, that unless one is thoroughly familiar with the road conditions, it would be well to be cautious about taking contracts of this kind. The continual use on the roads by the heavy trucks soon destroy the roads and put them in almost impassable condition. The speed is necessarily slow and the tendency to mechanical troubles and tire troubles very large.

I predict that 75 per cent of the large-capacity trucks sold west of Denver in the next few years to come, will be used for a similar mountain work.



REAR SUSPENSION, HELPER SPRING, AND BRAKE LINKAGE OF 1913 McINTYRE

McIntyre 1½-Ton Model One of Many

FOR 1913 the W. H. McIntyre Co., Auburn, Ind., in addition to nine other models of from 800 pounds to 3 tons capacity, is featuring a 1½-ton commercial car that presents interesting features. This truck, styled model A, is equipped with a motor of four cylinders, cast in block. double chain drive, and is provided with two lengths of wheelbase for different classes of service.

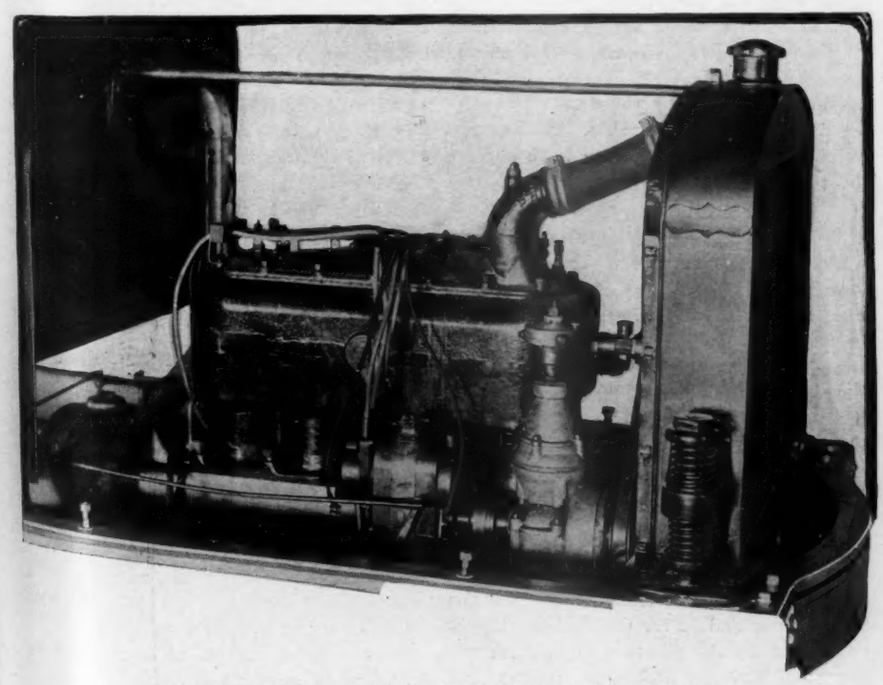
McINTYRE 1,500-POUND TRUCK WITH STAKE BODY

This truck is rated at 3,000 pounds capacity, the load being carried on a loading space which is approximately 6 feet wide and 12 feet long. The paying load is so sprung and balanced on the chassis that practically none of the load is carried on the front springs. The value of this construction is that regardless of the load, the motor always derives the full benefit of the springing, so that when running empty, road shocks are cushioned as readily as when under full load, thus saving the engine from destructive vibration that would ensue in empty running were the front springs required to sustain part of the paying load. The rear springing is also especially arranged to eliminate excessive vibration when running light. Two side springs sustain the body under all normal conditions, their strength being so gauged that even the lightest shocks are absorbed, even without a load, a transverse helper spring taking the severer shocks when under full load.

The balancing of the load as effected by this suspension is shown by the fact that with the truck empty, the weight on the front axle is 2,200 pounds, and on the rear 2,100 pounds, while with a full load and the driver in position, the weight on the front axle is but 2,500, while 4,800 pounds is sustained by the rear axle. The weight of the chassis alone is 3,600 pounds, while that of the standard body is 700 pounds.

The wheelbases offered are 120 and 144 inches, on option, to suit the nature of load to be carried, which allow turning radii, respectively, of 24 and 29 feet. The car is geared for moderate speed, and is fitted with a governor which makes a higher speed than 15 miles per hour impossible.

The car is driven from the right, with the levers in the center. A foot throttle which acts crosswise is used in connection with a hand throttle and spark lever on the steering wheel to control the motor, and the customary pedals and levers control the clutch, brakes, and change-gear respectively.



McINTYRE MOTOR SHOWING RADIATOR SUSPENSION

The motor is a Continental unit power plant, with cylinders cast in block, 4⅛ by 5¼ inches, with inclosed valve springs and tappets. The valves are carried on the left side, and are of 2-inch diameter. It runs on die-cast nickel babbit bearings. Camshaft gears are of 1-inch face, cut spiral. A Stromberg single-jet waterjacketed carbureter is used, supplied by gravity from a 22-gallon galvanized tank, with an auxiliary supply of 3 gallons. Ignition is by a dual system with a Briggs' magneto and flush dash coiled fitted with a kick-switch. Wires are led through cleats for protection. Lubrication is by constant-level splash system, with a camshaft-operated plunger pump and sight-feed. Cooling is by the thermo-syphon system. The radiator is of the vertical flat-tube type, holds 4 gallons, and is cooled by a fan. The radiator is suspended from the frame by a set of coil springs, which prevent distortion from frame warping, and absorb the severe vibration that is present with solid tires.

The flywheel is contained in a case integral with the crankcase, and contains the clutch. The clutch is of the dry-plate type, consisting of thirteen steel disks, each alternate disk being faced with raybestos. The disks are 8½ inches in diameter, and the clutch is adjusted by means of three bolts. The operating thrust is through annular ball bearings. A clutch brake is fitted to prevent the spinning of the clutch in gear changes.

The gearset is placed amidships, and is of the selective sliding gear type, final drive being by double side-chains. All brakes are on the rear wheels. Tires are 34 by 3½ front and 36 by 3 dual on the rear.

From the

TO reduce the number of accidents due to collisions between street cars and motor cars in Milwaukee, the Milwaukee Electric Railway and Light Co. is using large display space in the local daily newspapers warning drivers as well as passengers to use and induce care and caution. The advertising, while unique as concerns the use of motor cars, is in line with the policy of the traction company to encourage public safety by means of newspaper publicity. The campaign of warning to motorists was carried on heaviest during the period of the Vanderbilt cup races, when thousands of outside motorists brought their cars to Milwaukee. The principal advertisements were as follows:

"A WARNING TO AUTOMOBILE DRIVERS.—Keep a sharp lookout at crossings. Approach car tracks slowly, with your machine under control. Don't cross the car track behind a street car; you may run into a car on the other track, coming towards you. Don't turn into a car track in front of a moving car; you

SCARED Into Paying Fees—Despite the suit which is pending in the supreme court of Mississippi in regard to the constitutionality of the new state motor law, the license tax has been paid on 2,712 cars. The suit will be heard in December.

Motor Car Post Established—In the outlying districts of Istria, Austria, has been established a motor car post service which is proving very popular and takes the place of the horse diligence service, which was carried on over those excellent post roads years ago.

Minneapolis Wants Wheel Tax—Advice of the city attorney has been asked by the Minneapolis common council as to a motor vehicle wheel tax, the proceeds to be utilized in repairing streets. The attorney is asked to decide if it is without authority to make such a tax whether a law granting such authority can be passed and sustained.

Ohio Owns Many Cars—Statistics compiled by Registrar Shearer of the state motor car department at Columbus, O., show that one out of seventy-seven persons in the state own cars. This places the average ownership in this state far above the average, as federal statistics show that one car is owned by every 110 persons. Two states only show more owned than in Ohio—New York and Pennsylvania. More than 60,000 cars are owned in Ohio.

American Cars in Australia—American motor cars to the value of $443,992 were imported in 1911 into the Victorian consulate, which comprises the Australian states of Victoria, South Australia and western Australia. The motor car in this section is considered a matter of economy by the farmer, so much so that a local publication says, "The farmer without a car can no longer compete with the farmer with one." Following up the subject, and advising how Americans can secure more of this business, the Daily Consular and Trade Reports of September 24 says: "It can best be done by sending out more salesmen than has been the custom. An energetic salesman can do more business in a week than can be done by correspondence in 6 months. This consulate has yet to learn of an American drummer who has gone away from Australia dissatisfied with the volume of business transacted."

Popular Road Opened—The Automobile Club of Syracuse announces that the Camillus-Elbridge state road is open, which means that a continuous stretch of state highway now extends from West Camillus hill to Auburn, N. Y. Portions of the road have been closed all summer, necessitating detours.

Hoosiers Hold Election—Officers have been elected for the Hoosier Motor Club of Indianapolis for the ensuing year as follows: James L. Gavin, president; F. I. Willis, first vice-president; Dr. A. C. Kimberlin, second vice-president; P. C. Rubush, third vice-president; Joseph R. Raub, treasurer, and W. S. Gilbreath, secretary. George Ade, the humorist, and Harold Taylor have been elected honorary members of the club.

Alabama Uses Negro Chauffeurs—Only 36 per cent of the licensed drivers in Alabama are white. This is the result of the lower wage for which they will accept the service. The average age of chauffeurs is 22 years, only two men in the state having licenses who are over 30 years of age. The average height among the 3,224 men holding licenses is 5 feet 9 inches. The average weight is 160 pounds. In order to enforce the state motor tax more thoroughly this year every police officer has been made a deputy collector of car licenses.

Motor Facts from Brazil—In the city of Pernambuco, Brazil, are about 125 motor cars, the major portion of them the property of five garages, only forty being owned by private citizens. They have almost entirely superseded horsedrawn vehicles for pleasure use, although service is strenuous for them on account of the cobblestones with which the streets are paved. A set of tires on the public motor cars, which are from 16 to 40 horsepower, lasts about 22 days, and gasoline is about 30 cents a gallon. The charge for rental of these cars is $3 American money for the first ½ hour and $2 for each succeeding ½ hour. Among the pleasure cars in use are the Ford, Daimler, Delahaye, Duryea and Renault, while the few trucks used are of German manufacture. Duty amounts to about 16 per cent ad valorem. A medium-priced, very strongly built car, with serviceable hood for protection against heavy rains as well as the sun, is mostly in demand.

Rockingham Meet Postponed—The motor car and motor cycle races which were to be held at Rockingham Park, Salem, N. H., October 12, have been postponed for a week because the rain of the past few days softened up the track so that it would be dangerous, so the A. A. A. officials and the management decided not to try to run them off. These events will bring the racing season in the east to a close.

Road Meeting in Alabama—With the assembling of over 1,000 delegates in Birmingham, Ala., last week at the state good roads convention, the state claims to be first in the south in good roads activity. W. W. Finley, president of the Southern Railway, was the principal speaker. John Craft, president of the Alabama Good Roads Association, just having returned from the American Road Congress at Atlantic City, pointed out the lessons of that gathering to the assembled delegates.

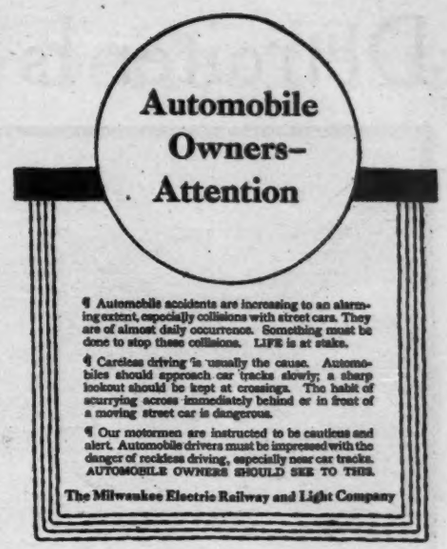
Shell Road to Be Restored—The shell road around Mobile bay, the most famous driveway in Alabama, is to be restored. The roadway was destroyed by the storm of 1906, which resulted in the death of fifty-five persons. The city and county have agreed upon the terms for the reconstruction of the road due to the activity of the car dealers in getting them together in an agreement as to the proportionate charges. The city will pay one-third of the expense of the reconstruction and the county the remainder.

Where Cars Are Plentiful—It is claimed that no community in the United States has a greater number of motor cars for its population than San Benito and the immediate adjoining section, embracing about 25,000 acres of cultivated land. The population of San Benito is little more than 3,000 and the number of cars owned by the people there and by the farmers of the surrounding section is 127. It is announced that orders have been placed for forty additional motor cars to be delivered before the first of next March, making a total of 167 that will then be in use. What makes

Four Winds

run the risk of a collision. Automobile accidents are increasing to an alarming extent. Collisions with street cars are frequent. Something must be done to stop these collisions. The way to stop them is by more careful driving on and near car tracks. To this end automobile drivers are earnestly urged to co-operate with this company."

"Automobile accidents are increasing to an alarming extent, especially collisions with street cars. They are of almost daily occurrence. Something must be done to stop these collisions. Life is at stake. Careless driving is usually the cause. Automobiles should approach car tracks slowly; a sharp lookout should be kept at crossings. The habit of scurrying across immediately behind or in front of a moving street car is dangerous. Our motormen are instructed to be cautious and alert. Automobile drivers must be impressed with the danger of reckless driving, especially near car tracks. Automobile owners should see to this."



the large number of cars that are owned there all the more remarkable is the fact that 5 years ago the site of the town, as well as the farms embraced in the 25,000 acres, were covered by a wilderness of chapparal with not an inhabitant thereon.

Alabama Makes Money—With the completion of Alabama's fiscal year, October 1, it is found that $64,489 was paid into the state treasury for motor car licenses. The expense of operating the department was $9,673.35. About half of the remainder, $24,434.90, was devoted to the improvement of roads.

Montreal Show Growing—The management of the Montreal show, which is to be held from January 4 to 11, under the auspices of the Automobile Club of Canada, has received so many applications for space that it has been obliged to secure a second building for overflow exhibit, the Sixty-fifth armories, in addition to the large drill hall in Craig street. At a recent meeting of the Automobile Section of the Canadian Manufacturers' Association it was decided to sanction only three national shows in Canada, at which members of the association will exhibit, these being Toronto, Montreal and Winnipeg. The Montreal show is being managed by E. M. Wilcox, 123 Bay street, Toronto.

Taft's Motor Tour—President William H. Taft got a very good idea of the splendid roads in New England last week when he made a swing through Massachusetts, Vermont, Maine and New Hampshire, accompanied by Mrs. Taft, the secret service men and a party of Washington newspaper men in three six-cylinder Pierce-Arrow cars. Through western Massachusetts he swung up to Vermont and then across New Hampshire to Bretton Woods, going from there down again, touching the edge of Maine and back to Beverly. He made a daily average of more than 150 miles, and when it is considered that he had to make several stops each day for speeches, and the party carried an immense amount of baggage, the tour was a strenuous one. At Bretton Woods he told Manager W. S. Kenney, of the Mt. Washington hotel, that he was surprised at the splendid condition of the highways in the mountains and that he never enjoyed a better day's ride than in winding through the woods and mountains with each turn presenting a newer and glorious picture formed by the autumn foliage together with a delightfully bracing air. He said for real pleasure a mountain tour in October through the White mountains could not be excelled.

New Boulevard Opened—The Buffalo-Niagara Falls boulevard, which the Buffalo Automobile Club was instrumental in constructing, will be officially opened for traffic November 15. Sixteen feet of the road is of brick and 16 of improved earth road, the boulevard being 32 feet wide along the entire course.

Belgium Plans Road Race—It is reported from Belgium that next year's Ostend meeting will be given a considerable extension and will comprise a long-distance grand prix road race, distance probably 400 miles, in which cash prizes of $8,000, $4,000 and $2,000 will be offered. The Royal Automobile Club of Belgium will have charge of the race, the date of which will doubtless be in the middle of June. The course has not been decided on, but probably will be in the Belgian Ardennes.

Drake on Another Tour—Joseph R. Drake, who made one tour around the world in the little Hupmobile, has gone on a second and more comprehensive journey around the globe. While the trip has an aspect of pleasure it is also for business. On his former trip Mr. Drake started westward, on the present trip he will sail from New York to England and after touring England and Scotland he will visit the Olympia show, London, and then tour the principal cities of Europe. From Europe the trip will be continued by boat to India, then to China, Japan, the Philippines, Australia and New Zealand.

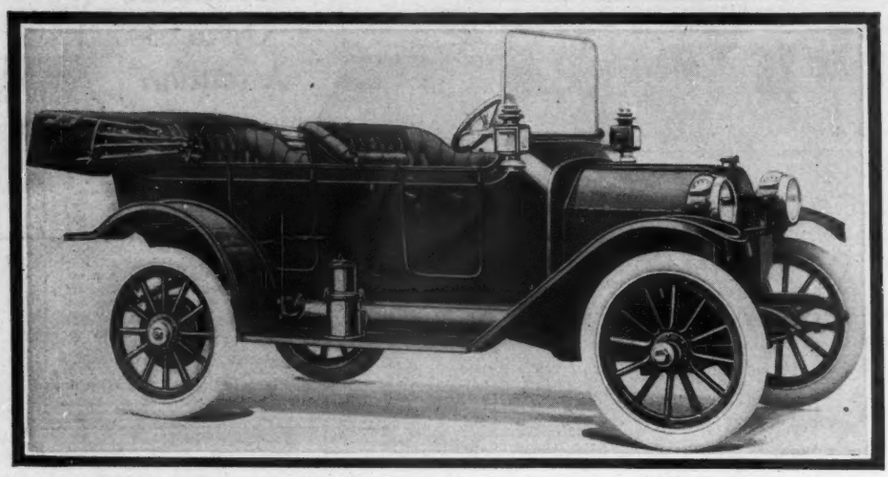
Want Road to Park—An association has been formed at Lemmon, S. D., to promote construction of a highway from the Twin cities to Yellowstone park, a continuation of the Parmley road, which is being built from Aberdeen to Mobridge. It is said that in the past season more than 20,000 cars visited the park, and that all but 110 went by the northern route through North Dakota because of better roads. The more direct route is said to be through Aberdeen, S. D., Mobridge and Lemmon, and Miles City and Billings, Mont. Officers elected are: President, J. W. Parmly, Ipswich; vice-presidents, J. E. Pringle, Ismay, Mont.; J. E. Philan, Bowman, N. D.; secretary-treasurer, F. A. Finch, Lemmon.

State Engineer for Louisiana—Owing to the large amount of good roads construction now in progress in Louisiana a state highway engineer has been appointed, who will be at the service of all parishes to indicate proper methods of road construction and to see that roads once built are properly protected. W. E. Atkinson, of Monroe, has been appointed to the new position. He is a graduate civil engineer who has been in charge of much road construction in Louisiana.

Mileage of City Cars—An interesting report of the mileage of motor cars used in the Indianapolis police department, during 1911, has just been filed with the board of public safety by Martin J. Hyland, chief of police. The two Packard patrol wagons covered 23,868 miles in 7,249 runs, carrying 9,139 prisoners to the police headquarters, 1,804 prisoners to the workhouse and 165 prisoners to the woman's prison. The Premier touring car used for emergency runs made 1,978 runs, carrying 401 prisoners and making a total of 12,542.1 miles. The total cost of gasoline, oil and maintaining the three machines, exclusive of the drivers' salaries, was $3,927.60, it is announced by the board of public safety.

Importers Announce Salon—As has been the case for several years past, the 1913 show season will be inaugurated by the annual salon of imported cars, held in New York. The dates for the coming salon are January 2 to 11, and it will again be staged in the ball room of the Hotel Astor, New York city. With one or two exceptions all of the foreign makes represented in this country will participate in this season's salon. Among those who have already arranged to have Paris exhibits shipped to this country are de Dion-Bouton, Isotta-Fraschini, Lancia, Mercedes, Metallurgique, Minerva, Panhard and Renault. This list represents five nations, France, Germany, England, Italy and Belgium.

Detroiter Is Offered for Second Year



DETROITER TOURING CAR OF SERIES II

Two-year-old Is Offered With Refinements and Complete Equipment for 1913

WITHOUT change of model, the Detroiter, now in its second year, is announced for 1913 with only minor changes. The policy of the manufacturers is that of producing on the series plan, the machines being made in lots of a thousand, changes and refinements being made as needed, on beginning the manufacture of a new lot. The sale of 5,000 of these little cars is contemplated for the new season.

The Detroiter is a five-passenger touring car of 25 horsepower, with a four-cylinder monobloc motor, multiple-disk clutch, floating rear axle, and platform rear springs that is sold at a moderate price with full equipment. The new series differs from the last only in minor refinements, such as steel stampings to take the place of castings at several points, and a paring down of the weight in several points.

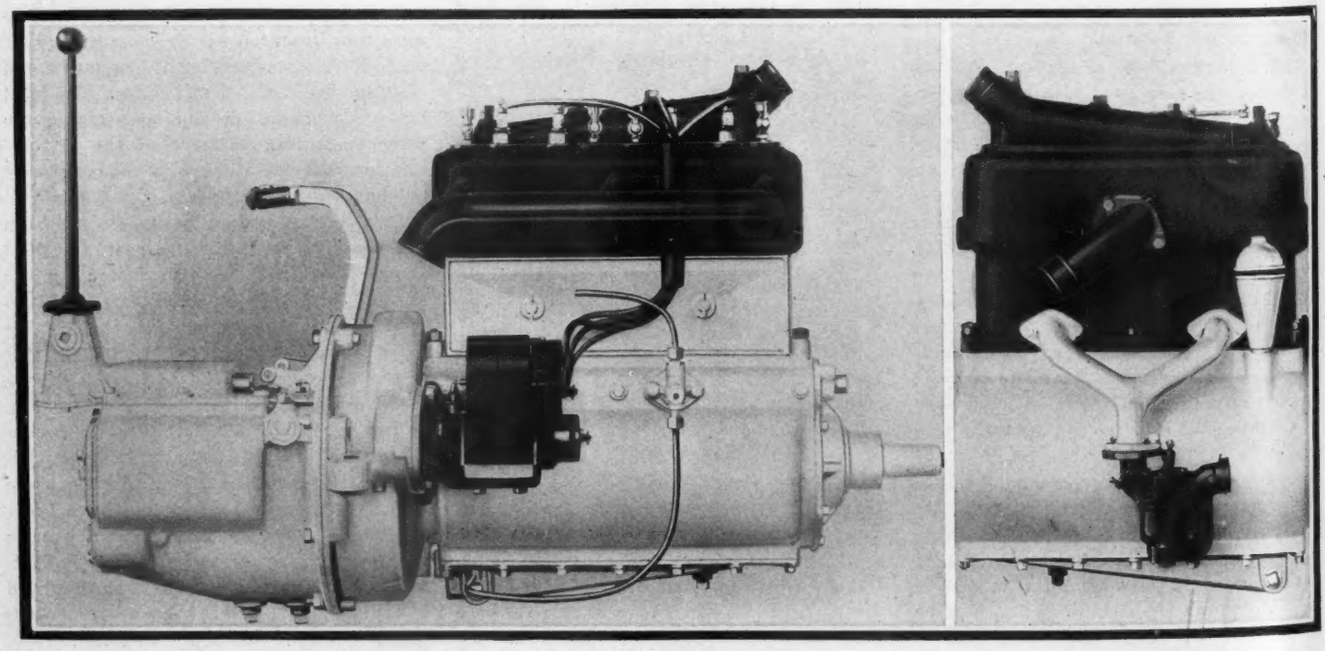
The motor is of four cylinders, cast in block, with waterjackets, intake manifold, and valve inclosures integral, and very simple in design. The cylinder sizes are 3⅜-inch bore by 4¾-inch stroke, giving a bore-stroke ratio of 1:1.4, a long-stroke type. The valves are all on one side and interchangeable. They are fully inclosed by a steel plate which fits over the valve-rod housing, excluding water and dirt, retaining oil and muffling valve noises. The heads are of gray iron, welded to low-carbon stems electrically, and fitted with adjustable tappets that have large surfaces. The pushrods operate in bronze bushings, which may be replaced when necessary.

The inlet manifold is situated on the left side and feeds through internal passages between the first and second and third and fourth cylinders to the valves on the right side. In this passage the gases are thoroughly warmed by the hot cylinders.

The camshaft is turned and ground from a solid drop forging, and hardened. It is supported on three bearings, the end bearings being 2½ inches in length, and the center bearings 1¼ inches long, and driven from the crankshaft by helically-cut timing gears, situated at the rear of the crankcase just forward of the flywheel. The camshaft gear is of gray iron, and is driven by a steel gear on the crankshaft. The magneto shaft, on the side of the motor, is operated by an additional steel gear. By this design the gears operate in a constant bath of oil, and are less liable to be altered by the novice repairman. The driven cam gear is bolted to the camshaft on an integral flange.

The crankshaft is supported on two ball bearings, and with the pistons and connecting-rods, is balanced, to ensure even running. The pistons are of gray iron, fitted with three eccentric piston rings. The connecting rods are of I section, of drop forged steel, with crank-pin bearings, 1⅞ by 1⅞ inches.

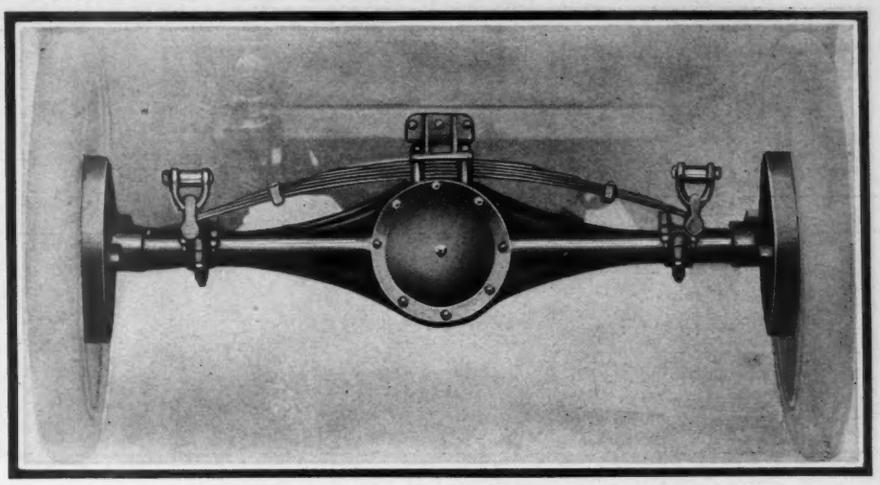
A double system of lubrication is used, consisting of a circulating splash system in the crankcase, feeding through a sight-feed on the dash to the front end of the crankcase, and supplying a constant crankcase oil level; and a centrifugal circulation in the flywheel-case, the multiple-disk clutch and the timing gear housing caused by the flywheel running in a bath of oil. The motor is water-cooled by the



RIGHT SIDE OF DETROITER UNIT POWER PLANT AND INTERESTING INTAKE PIPING ON LEFT SIDE

Car To Be Marketed on Series Plan

No Yearly Models for Makers of Baby Four Selling in Series of 1,000 Cars



DETROITER FLOATING AXLE AND PLATFORM SPRING

thermo-syphon system, using 2-inch piping and a vertical tube radiator.

A fixed high-tension spark is used, current being taken from a Bosch high-tension magneto. The spark is set so as to give sufficient advance, even on a wide open throttle, to prevent overheating, and sufficiently late to prevent back-fire in starting, and pounding under heavy pulling.

The unit power plant, including the motor, clutch and transmission, is included in two cases—the crankcase, upon which the motor is built, and which extends back surrounding the flywheel, and to which is bolted the gearset case. The unit is supported at one point at the forward end of the crankcase, and at two points at the flywheel housing. Drive is through a shaft and one universal joint to the rear axle.

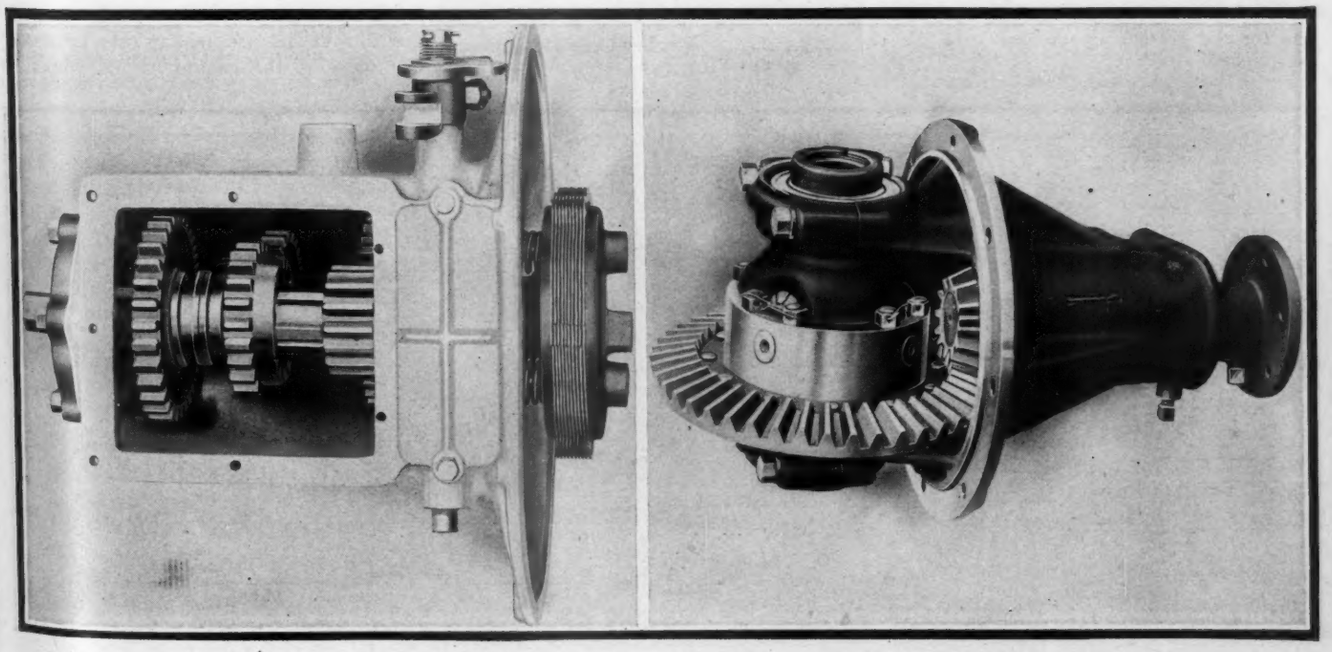
A multiple-disk clutch in oil is used, consisting of twenty-three crucible steel disks actuated by three helical springs. The gearset is of the selective sliding gear type, affording three speeds. The gears are of ¾-inch face and cut from carbon steel, heat-treated and hardened. The gearset runs on annular ball bearings. The rear axle is of the floating pattern, in a pressed steel housing, well-ribbed and braced. A large cover back of the differential housing may be removed to permit the removal for inspection or adjustment of the differential, and the axle shafts may be removed without disturbing the wheels. The gear ratio on high gear is 4 to 1.

Propulsion is through a torsion tube over the driveshaft. The frame is of pressed steel, the side members being 33 inches apart at the rear, but converging to 29 inches in width at the front. The frame is dropped 3 inches just forward of the rear axle, and the bracing at the forward portion has received especial attention. The springs are half elliptic in front and platform in the rear, 1¾ inches wide, and fitted with rebound clips. The spring connections are all fitted with compression grease cups.

The tires are 32 by 3½, all wheels being of twelve spokes and mounted on ball bearings, those on the front wheels being of the cup-and-cone type, and on the rear, of the annular non-adjustable type. The front axle is of I-beam section with the tie-rod behind the axle. Steering is by a worm-and-sector steering gear, operated from the left side by a 17-inch hand wheel.

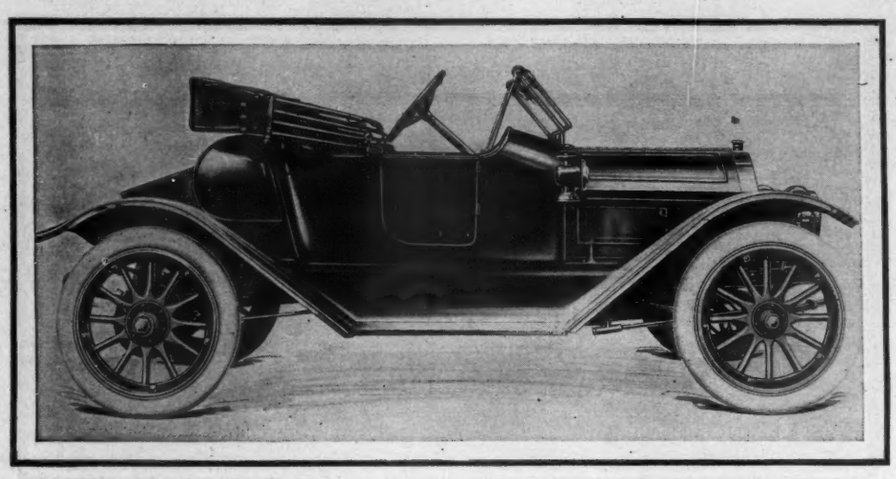
Center control is used, the change-gear lever being located in the center of the front floor. The clutch and service brake are operated by the left pedal, and the emergency brake by the right, the latter being fitted with a ratchet. The motor is controlled only by the throttle on the steering wheel. The two brakes are both of the internal expanding type, the service brake on 14-inch drums, and the emergency brake on 10-inch drums.

The body of the Detroiter is for five passengers, with fore-doors, and is regularly painted a dark raven blue, striped with light blue. The regular equipment includes a mohair top, glass front, horn and tools, lamps and a gas generator.



DETROITER GEARSET WHICH IS BOLTED TO FLYWHEEL CASE, MULTIPLE-DISK CLUTCH AND DIFFERENTIAL

Marathon Cars Have Olympian Titles

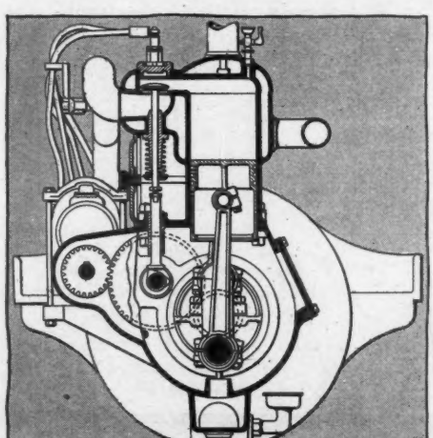


MARATHON RUNNER A LOW-PRICED TWO-PASSENGER ROADSTER

INTEREST in the late Olympian games this summer is responsible, perhaps, for the new method of designating the three models which comprise the Marathon line of cars for the 1913 season which has just been announced. Inasmuch as the marathon is the most famous of the distance events of the international athletic meet it is fitting that the motor cars bearing this name should be given the model names of Runner, Winner and Champion.

Aside from the change in the designation of the type, there is little alteration in the three models for the coming season from those of the present one. The Runner model corresponds quite closely to its predecessor, which was known as the K-20, although there has been an increase in the size of the motor. The Marathon Winner is a continuation with refinements of the M-40 of this year, and the Champion is almost the same as the N-50 for 1912. The model L-30 which was included in the line for the present season, has been discontinued.

Alterations in design for 1913 include increased bore and stroke in the Runner, floating rear axle construction in the two larger chassis, with semi-floating rear axle in the small one. In all models, however, the rear axles are incased in a one-piece steel housing. The wheelbases have been increased in the Runner and Champion models; in the former from the 90 and 96 inches used in the roadster and touring chassis respectively this year to 104 inches for 1913; in the Champion model the wheelbase is 123 inches instead of 120 inches in the 1912 design. The Winner model has a 116-inch wheelbase, the same as the model L-30 of the season just closing.



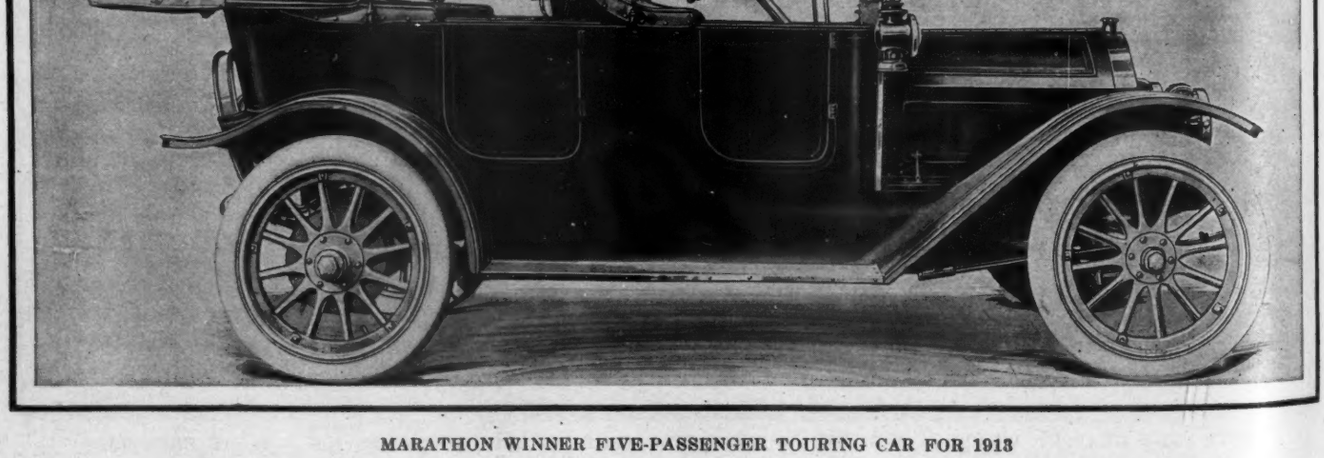
SECTION OF MARATHON MOTOR

Tires are the same in size except in the case of the smallest model, where they have been increased from 32 by 3 inches to 32 by 3½ inches. The springs have been lengthened in all three models to increase the easy-riding qualities of the car. The most general changes have occurred in the body designs rather than in the chassis. For the new year the bodies have been widened considerably and also have been given more leg room in the front of the car. On the roadster body the length has been increased 8 inches.

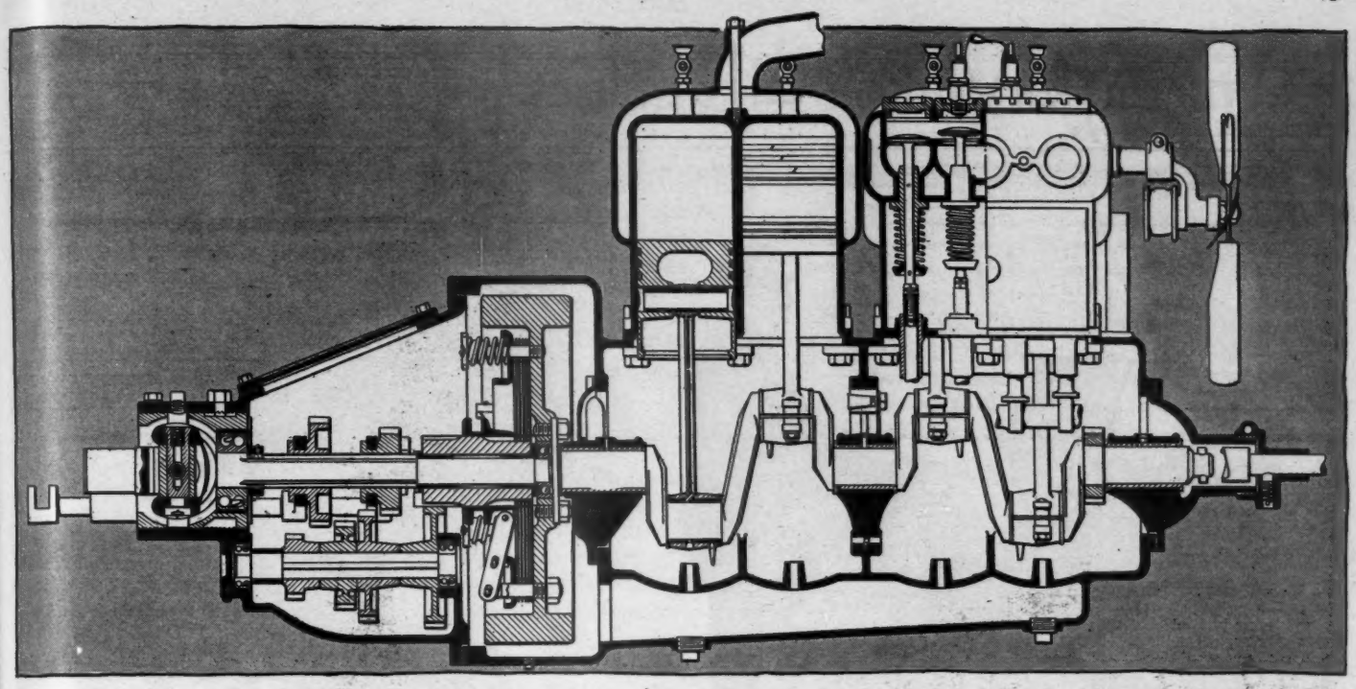
Seven years of Marathon construction has produced a uniformity of design in all the different sizes of cars. Particularly is this noticeable in the power plant, in which there is little difference except as to dimensions.

The design embraces in each case a unit power plant with a four-cylinder motor of which the cylinders are cast in pairs, a multiple-disk clutch operating in oil in the flywheel housing and a sliding gearset with straight-line drive to the rear axle through a single universal joint. Among the other features common to all the models are a dual system of ignition comprising a magneto and storage battery, a front axle of I-beam section with ball bearings and a worm-and-gear type of steering mechanism with four full positions to take up wear.

Some of the engine details which are



MARATHON WINNER FIVE-PASSENGER TOURING CAR FOR 1913



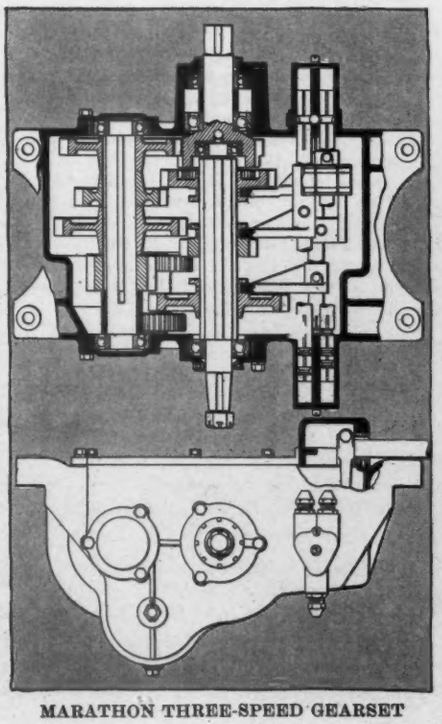
LONGITUDINAL SECTION OF THE UNIT POWER PLANT OF MARATHON CARS

present in all three sizes are the L-type of cylinder head, the valves on the right side and driven by spiral timing gears; interchangeable exhaust and inlet valves; pushrods of the mushroom type, offset to allow for even wear and provided with means of easy adjustment; thermo-syphon circulation of the cooling water with a belt-driven fan; and a crankcase cast in one piece to obviate the chance of leaking joints and to provide a rigid support for the crankshaft.

In the two larger models the valves are inclosed in an aluminum plate for each pair of cylinders and which is quickly removable. The camshaft is a single forging, the cams being forged on the shaft and then hardened and ground. The crankshaft is offset and is a drop forging of nickel steel, as are the connecting rods. The bearings are of special nickel babbit and are supported from underneath in the one-piece crankcase. This permits adjustment of the bearings from the top. Lubrication is obtained through a flywheel circulating system with a constant level and splash to the cylinder. The flywheel housing is in the lowest place in the crankcase reservoir, and here the oil is picked up by the rotation of the flywheel and carried by centrifugal force to a pocket near the top of the flywheel housing, from which it is distributed by gravity to the motor bearings. Cooling is on the thermo-syphon principle, with a vertical tube radiator. The magneto is fastened to a lug cast on the crankcase and is driven through a special gear and Oldhman coupling.

Within the flywheel is located the clutch. This consists of twelve saw-steel plates running in oil. As it is supported on two bearings, the plates are always in alignment and the possibility of grabbing is minimized. It is claimed that the leverage in the clutch pedal is great enough to allow it to be disengaged by one finger. Three springs are used in the clutch, and an easy means of adjustment is provided through a hand hole on the gearset housing. This type of clutch has been a feature of Marathon construction since the organization of the company 7 years ago.

Arranged in the housing and bolted to the flywheel housing are the transmission gears of the gearset. Final drive is through a shaft inclosed in a torsion tube, and a single universal joint inclosed in a ball on the end of the gearset case. Radius rods from the rear system to the end of the torsion tube are added. Channel section frames of pressed steel are employed and springs are semi-elliptic in front and elliptic in the rear. Rear axles are of Hess construction, fitted with ball bearings of ample size.



MARATHON THREE-SPEED GEARSET

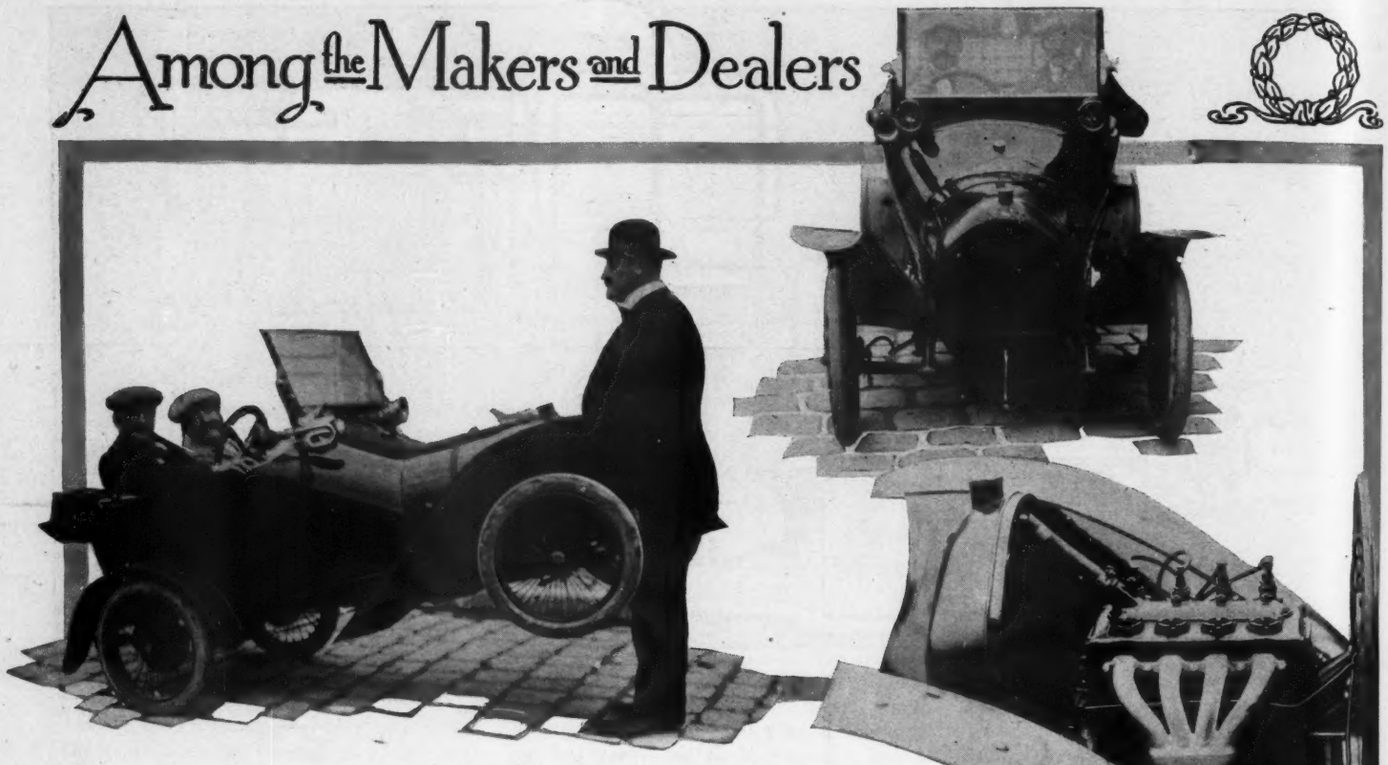
With the foregoing details of general design in view a discussion of the individual models becomes simplified. The smallest model, the Runner, has cylinders of 3½ inches bore and 4½ inches stroke. This is quite an increase in size over the corresponding model of last year, whose cylinders were 3¼ inches by 3½ inches bore and stroke. The gearset of this model provides two forward speeds, although, like the others, it is of the sliding type. The rear axle in this model is of the semi-floating type, with a pressed steel housing, which is light and strong.

Both roadster and five-passenger touring bodies are fitted to this chassis. The roadster body has a gasoline tank of unique shape. This shape is called the cam, and the reason for the name is apparent from the illustration. The shape is such that every drop of fuel in the tank will be drained from it, no matter in what position the car may be standing; and it incorporates well with the body lines.

The Marathon Winner chassis carries three bodies, a roadster, touring and coupe. Its motor is rated by the makers at 35 horsepower, the cylinder dimensions being 4¼ inches by 4½ inches bore and stroke. The Champion model has a motor of 4½ inches by 5⅛ inches bore and stroke and is supplied with roadster and five or seven-passenger touring bodies.

Aside from the usual equipment of top, top boots, windshield, speedometer, tire iron, demountable rims, and so on, there is supplied as regular equipment special seat covers, a rather unusual offering in the list of regular equipment.

Among the Makers and Dealers



VIEWS OF BABY PEUGEOT WHICH HAS JUST MADE ITS DEBUT IN FRANCE

FRANCE is at present showing a decided preference for what have been termed baby cars—small, light, two-seaters costing little more than a first-class motor cycle and having about the same upkeep cost. Up to recently these machines have been produced by firms of comparatively little importance, but rumor has had it that the Peugeot company, one of the most important in France, intended to enter the market with a big series of baby cars, the designs for which had been entrusted to Ettore Bugatti, a successful Alsacien engineer, and producer of the high-grade Bugatti car. It was not expected that the new Peugeot would be shown to the public before either the London or the Paris shows, but by reason of the activity of one of the selling agents of the French concern it was revealed at the agricultural motor exhibition just held at Bourges.

The baby Peugeot is built, so far as its external appearance is concerned, on big-car lines; its dimensions, however, are decidedly diminutive, it being so low and so light in appearance that it really has all the appearance of a baby car. The power plant comprises a four-cylinder block motor of only 2.1 by 3.5 inches bore and stroke. The valves are on opposite sides and are of large diameter; the timing gears are in front, with the magneto on the intake side having its shaft parallel with the motor shaft. The carbureter is a Claudel.

A novel feature of the machine is the casting of the four cylinders and the whole of the crankchamber in one piece. The base plate is independent and is bolted on. In all probability there are detachable end plates to receive the two main bearings, but on this point no definite information could be obtained from the agents in charge of the car, and an external examination did not reveal the exact nature of the construction.

The motor is bolted directly on the underpan, this latter being of stiffer material than is usually employed and bolted to the channel section side frame members. With this construction it is obviously impossible to make any internal examination of the motor without lifting it entirely out of the chassis, but owing to its small area and very low weight this is by no means a difficult task.

The power is taken through a cone clutch and a two-speed gearset through a propeller shaft to a floating rear axle. The gearset is a special type, particulars of which have not yet been given out. The motor is lubricated by splash, the oil tank being in the scuttle dash, with filler cap on the outside of the dash. The gasoline tank is built in the back of the rear seats, the top being polished mahogany and hidden by the top when this latter is down. Front suspension is of the usual semi-elliptic type. The rear springs are really the half of a semi-elliptic spring inverted, the thick end being attached to the frame member and the forward end of the main blade to the rear axle housing. Truffault absorbers are fitted.

The car is supplied with wire wheels having 22 by 2½-inch tires, and is listed complete with two-seat body, three lamps, acetylene generator within the scuttle dash, horn and tools, at $800 retail. It was at first reported that the car would be put on the market at $650.

McGRAW Increases Stock—At the regular monthly meeting of the board of directors of the McGraw Tire and Rubber Co., held at East Palestine, O., it was unanimously voted to increase the capital stock from $100,000 to $250,000. The directors voted a stock dividend of 50 per cent plus a cash dividend of 10 per cent. The McGraw company has made several important additions to its plant this year, including the building of a laboratory. This company also has opened a selling branch at 1706 Broadway, New York city.

Willard Adds Another Plant—The Willard Storage Battery Co. has purchased the real estate and three-story brick and stone manufacturing building on Lakeside avenue, Cleveland, O., formerly occupied by the Frost Wire Fence Co. The building so acquired affords the Willard company an additional 50,000 square feet of space admirably adapted to its use, both on account of its arrangement and its close proximity to its No. 1 plant. The acquisition of this property, to be known as plant No. 3, gives the company three separate and distinct plants, all of larger capacity, each one of which is furnished with all necessary equipment required for operating independently of the others. The purchase of the new plant was prompted by two reasons: to assure against the possibility of interruption of production vol-

ume in case of fire and to afford ample room for expansion. Should one of the plants be completely destroyed by fire, deliveries would in no way be affected.

Death of Wheel Maker—Frederick Bimel, president and general manager of the Bimel Spoke and Auto Wheel Co., Portland, Ind., died recently.

Budd Joins Sanford Forces—J. G. Budd, manager of the Victor Motor Truck Co., Buffalo, N. Y., has resigned that position to become general sales manager of the Sanford Motor Truck Co., manufacturer of Sanford trucks.

Plew Quits White Service—The Chicago retail selling branch of the White Co. has been put under the direction of John A. Bell, vice James E. Plew, resigned. Mr. Bell is assisted in the local field by Frank H. Pietsch. The general western sales branch of the White Co. is still under the direction of W. J. Urquhart.

Tire Man Changes Jobs—J. A. Ford, of the Cleveland Mechanical Rubber Co., has resigned his position as superintendent, to join the forces of the Goodyear Tire and Rubber Co., Akron, O., where he has accepted a position in the experimental department in connection with mechanical goods.

Teegarden De Tamble Trustee—A meeting of creditors of the De Tamble Motor Co. was held at Anderson, Ind., October 9. John C. Teegarden, temporary receiver of the concern, was appointed trustee for the $75,000 of unsecured claims. There is in addition to the unsecured claims, a mortgage indebtedness, secured by bonds, amounting to $133,000. It was reported at the creditors' meeting that some of these bonds have been purchased at 10 cents on the dollar and an effort will be made to have the court consider the bonds at the price at which they were sold, instead of at par value.

Change in Engine Concern—The Milwaukee Motor Co., of Milwaukee, Wis., has been reorganized following the sale of the controlling interest by E. E. Warner and C. F. Kaiser, founders of the big works, to other interests. The new official personnel consists of the following: President, J. C. Coerper; vice-president, August John; secretary and treasurer, Henry John. August John will be general manager. J. D. Bowes, former vice-president, remains as a director of the corporation and will act in a managerial capacity. James Church, formerly of the Davis Gas Engine Co., has become associated with the reorganized motor company in a prominent mechanical capacity. The Milwaukee Motor Co. was organized in 1903 with a capital of $10,000 and today owns and operates a large factory at Thirty-second and Burleigh streets, Milwaukee, producing several thousand motors for pleasure cars and trucks annually. Additions to the works and improvements, including equipment, now being completed, aggregate in value $80,000 and will require a working force of more than 600 skilled laborers. The contracts now on the books amount to $1,000,000. The retiring president, E. E. Warner, will continue in an advisory capacity for a short time.

McNab Joins Marion Company—M. D. McNab, of Chicago, has joined the executive force of the Marion Motor Car Co. He has resigned as general manager of the United Motor Chicago Co., and now becomes vice-president of the Marion and director of sales. McNab will make his headquarters in Indianapolis.

Hall Made Salisbury President—Frederick P. Hall has been elected president of the Salisbury Wheel and Mfg. Co., Jamestown, N. Y., succeeding Scott H. Penfield, who becomes sales manager and vice-president. Directors elected are Fletcher Goodwill, president of Chautauqua worsted mills, and John F. Thompson, of New York city.

Illinois Dealers Meet—At the semi-annual meeting of the Automobile Dealers' Association of Illinois, held at Springfield during the state fair, there was a large attendance and various matters of interest to the members discussed. The report showed an increase in membership. It was voted to conduct an active campaign in the direction of state roads to be constructed with the money derived from the licensing of cars. The monthly meetings of the executive committee will be revived after 4 months' dormancy and the next will be held at Peoria on October 22. The annual election of officers takes place during the Chicago show.

Lenox Expanding—The Lenox Motor Car Co. of Boston has increased its business so that it has outgrown its present quarters in Boston and so a factory has been secured at Hyde Park, Mass., in which to build the product.

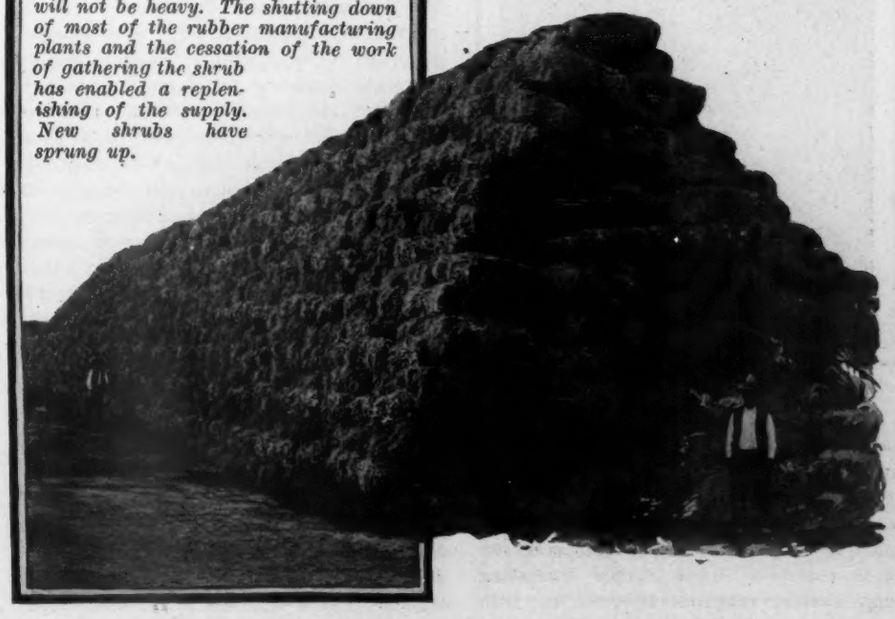
Moon Has Good Year—The Moon Motor Car Co., St. Louis, reports business increased 217.1 per cent in 1912 and a total dividend of 25 per cent was distributed among the stockholders. In the past season many additions were made to the Moon factory, increasing its capacity 65 per cent.

Appersons Hold Annual Meeting—The annual meeting of the stockholders of the Apperson Brothers Automobile Co. was held at Kokomo, Ind., October 8. Elmer Apperson, Edgar Apperson and T. E. Jarrard were elected as directors for the ensuing year. Later at a meeting of the board of directors officers were elected as follows: President and general manager, Elmer Apperson; vice-president, T. E. Jarrard; secretary-treasurer, Edgar Apperson.

Considering Big Plans—An important meeting of the Indiana Automobile Manufacturers' Association will be held at the Claypool hotel in Indianapolis on the evening of October 31. Committees will report on the plan to give the association's run to San Francisco in 1913 and on the plan to engage a special train to take the exhibits of Indiana manufacturers to the New York show in January. Officers have been elected for the association for the ensuing year as follows: President, C. B. Warren, Haynes Automobile Co., Kokomo; vice-president, W. B. Harding, G & J Tire Co., Indianapolis; secretary, J. M. Ward, Jr., American Motors Co., Indianapolis, and treasurer, E. Mack Morris, Great Western Automobile Co., Peru.

STILL CUTTING GUAYULE

NOTWITHSTANDING the long continued rebel activities in the section around Torreon, Mexico, the work of cutting the guayule shrub is in progress on many of the ranches. At some of the plants there are great ricks of the baled shrub. Not infrequently as many as 5,000 bales are in one rick. While the revolutionary disturbances have caused a great falling off in the production of crude guayule rubber, it is believed in the long run the losses from this source will not be heavy. The shutting down of most of the rubber manufacturing plants and the cessation of the work of gathering the shrub has enabled a replenishing of the supply. New shrubs have sprung up.



GUAYULE SHRUB IN BALES AWAITING NEEDS OF FACTORY

Development Briefs

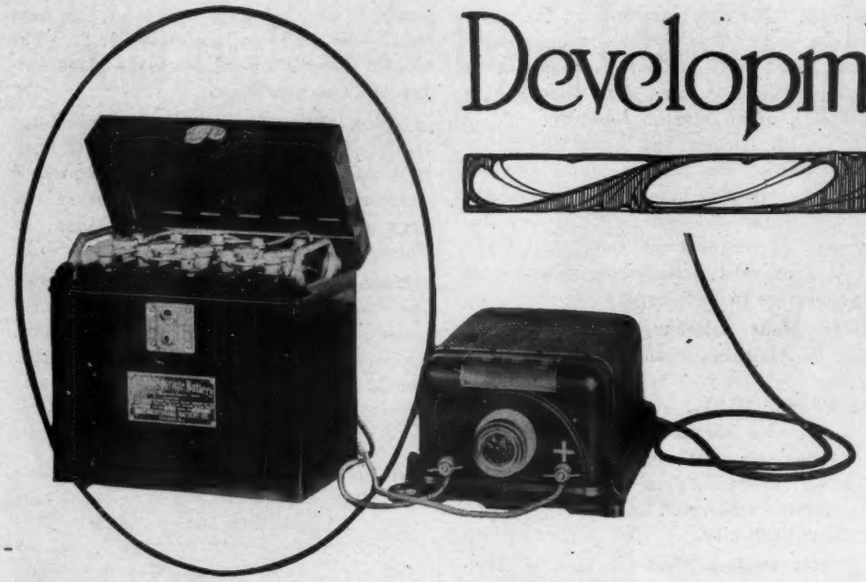


FIG. 1—SMALL SIZE EDISON RECTIFIER CONNECTED DIRECT TO STORAGE BATTERY

Edison A. C. Rectifier

EMPLOYING neither vacuum tubes, mercury, high-tension discharge, nor revolving armatures, field windings, brushes, or other wearing parts requiring lubrication, one of the latest products of the East Orange laboratories appears in the form of an alternating current rectifier for use in charging storage batteries, that is of a distinctly new type. Its action on the alternating current is to be compared to that of a check valve in a suction pump, in that it simply allows current waves of only one polarity or direction of flow so-

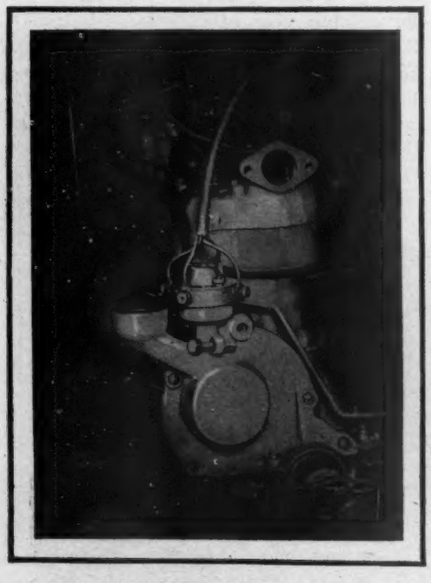


FIG. 2—FORD TIMER ELEVATOR

called to pass through it from an alternating current supply to the battery that is being charged. This is accomplished by means of a system of vibrators in conjunction with a transformer and condenser. It is controlled by a simple indicating snap switch, such as is used to turn on and off electric lights. Current is taken from any alternating current lighting circuit of from 110 to 125 volts, and of from 60 to 25 cycles. The rectifier may be used direct by simply screwing the plug into a lamp socket, or a rheostat and ammeter may be wired in the circuit by means of terminals provided therefor, to enable the operator to gauge the current more accurately, and to ascertain to a certainty when the battery has received its full charge. The use of the rheostat and ammeter is especially advised in connection with lead type batteries.

These rectifiers are made with 110-125 volt alternating current windings, and with a special winding for 220 volt circuits. They are made in two sizes, of three cycle capacities each. In Fig. 1 is shown the small outfit, charging direct, and in Fig. 4, the large size, in conjunction with the controlling rheostat and ammeter, charging two sets of batteries. Thomas A. Edison, Inc., Orange, N. J., is the manufacturer.

The Automatic Valve Grinder

That such an apparently simple operation as valve grinding should require such an elaborate appliance as that illustrated in Fig. 6, seems at first incongruous, but when it is remembered that, in proper grinding, the valve must be oscillated in a wide arc, that the arcs of oscillation must be changed progressively, in order to insure an accurate seat in any position, and a true conical form, and that the valve should be raised at regular intervals, to insure even distribution of the grinding paste, it will be seen that a device to be substituted for human skill and experience must be more than a mere screw driver. The Specialty Machine Co., New York, have produced the valve grinder shown in the figure to accomplish all of these functions automatically. It consists of a drill frame, the spindle of which is driven by a bevel pinion, which is in turn driven by an oscillating gear segment. This segment is attached to a pivoted arm, slotted above the pivot, to

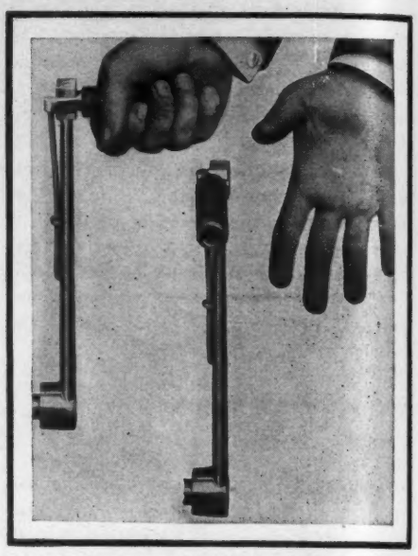


FIG. 3—WINK FOLDING SAFETY CRANK

receive a small crank, secured to the shaft of a larger hand crank. To this hand crank is secured a small spur pinion, meshing with a large spur gear. This gear is cut with a cam slot on its inner face, in which a roller is disposed. This roller operates a clutch which alternately engages and disengages the drill spindle, and raises the valve as directed by the cam.

The engagement of the clutch is made positive by a spring, which also produces a constant pressure on the valve, the pressure of the operator on the handle being taken by the four feet at the base of the frame which also keep it level. The action of the machine is thus exactly as outlined above, the operator merely turning the crank, and exerting enough pressure to keep the feet seated.

Ford Timer Elevating Device

With no other tool than a wrench, the attachment shown in Fig. 2 may be applied to a Ford engine for the purpose of elevating the timer to a more accessible, protected and advantageous position than it now occupies. This appliance is manufactured by the Ford Parts Specialty Co., Richmond, Ind. As shown in the figure, the new position afforded by the device is high enough to be well out of the mud and oil of the lower portions of the engine, and the timer is horizontal instead of vertical, so all of the wires may be led straight up from their terminals to the flexible loom which conducts them to the coil. The casing in which the gears are enclosed on a standard Ford motor is removed, and the new appliance substituted for it, the same bolts being used, with no changes whatever, other than the substi-

Novelties for Motoring

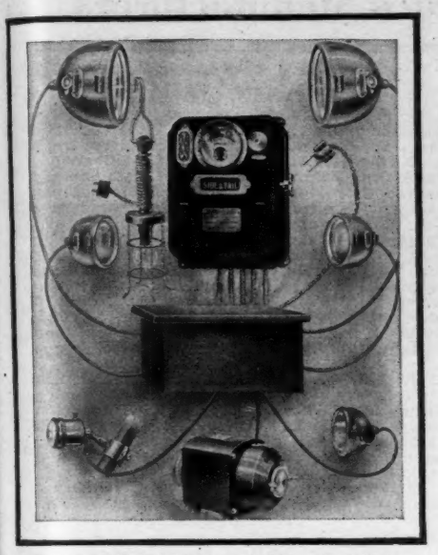


FIG. 5—LUXURIOUS BROLT LIGHTING

FIG. 4—LARGE SIZE EDISON RECTIFIER WITH RHEOSTAT AND AMMETER EQUIPMENT

tution of the elevating device for the standard end plate, the necessary changes in wiring, and the substitution of a special spark control rod for the regular one.

The vertical timer shaft is driven from the camshaft gear by spiral gears, directly in the path of the special oil breather, insuring good lubrication. This breather pipe permits the crankcase to be filled with inclosed on a standard Ford motor is reincreased ease.

Carbolide Carbon Remover

Unique in its manner of use, Carbolide, the product of the Carbolide Co., Monrovia, Md., is presented with broad claims of superiority over the customary methods of decarbonization. This material is a volatile compound that is injected by a squirt gun into the cylinders of a hot engine, in liquid form, where it is said to instantly form a gas, which must be confined to operate. It is claimed to be harmless to the motor.

Wink Folding Crank

Safety cranks are not new, but the combination of simplicity and claimed effectiveness of the Wink crank, Fig. 3, is novel. Other than the handle, the Wink crank is identical with standard design, being connected to the engine shaft by a simple ratchet. The handle is pivoted to the crank, which permits it to be turned one-fourth turn to the left, or straight out. A cantilever spring is used to return it to the folded position, when released by the operator. The safety feature is in the fact that a backkick will jerk the crank from the hand, the handle folding instantly, so that on the return of the crank, the handle will not strike the wrist of the operator. It is said that in most cases where backkicks have resulted in broken arms, it has been the result of the handle of the crank striking the wrist on its backward revolution. This is made impossible in the Wink crank by its automatic folding feature. The cost of manufacture of this crank is but little greater than that of any standard crank, and the company offers to supply them in exchange for the old crank, 5 cents, and the expressage.

Brolt English Electric Lighting

With characteristic British thoroughness, Brolt, Ltd., Birmingham, Eng., has produced an electric lighting system that compares very favorably with the highly-developed American products. It consists of an engine-driven generator, a storage battery, and an elaborate switchboard on the dash, with connections to the lamps, etc. Fig. 5 shows the complete 12-volt system, consisting of the generator, the storage battery, or accumulator, the switchboard, and the lamps. The most important features of the system are the generator and the switchboard. The generator is a direct-current shunt-wound dynamo, mounted upon ball bearings, and completely inclosed and dust tight. The feature of the machine is the arrangement to prevent the overcharge of the battery. This consists of a pair of auxiliary field poles, whose action is to short-circuit the armature in a greater or less degree, according to the speed of the dynamo, preventing battery overcharge.

The switchboard arrangements are among the most complete and convenient yet produced. All connections lead from the bottom of the case. This assembly consists of an automatic cut-out to prevent leakage of current from the battery to the generator, at low speeds of the latter, a volt-ammeter, the bus bar, and the control switch. This last is controlled by a knob at the side and registers in a window, shown in the figure. Five positions are afforded, including total disconnection of all parts, charging, side and tail lamps on, all lamps on, and head and tail lamps on, the dynamo being switched on in all positions except the first. A plug connects the dash light, which may be removed, and with an extension cord, a trouble lamp inserted. A tell-tale ruby light is situated on the case that warns of the failure of the tail light. A small push-button at the right of the volt-ammeter causes it to register volts, amperes being shown at all other times. In line with the most advanced practice, all battery circuits are in series, two wires leading from the generator to the switchboard, and two to the battery.

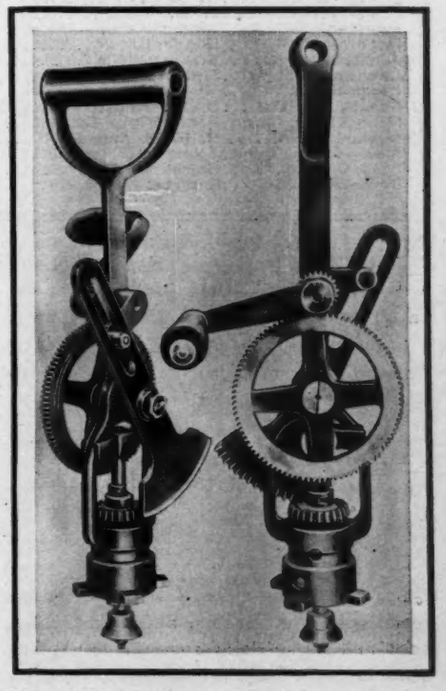


FIG. 6—AUTOMATIC VALVE-GRINDER

Brief Business Announcements

Recent Agencies Appointed by Car and Truck Manufacturers

PLEASURE CARS

Town	Agent	Car
Amherst, Nebr.	Geo. Christofferson	Studebaker
Anaheim, Cal.	P. J. Weisel & Co	Henderson
Arapahoe, Nebr.	A. Benjamin	Studebaker
Arlington, Nebr.	J. C. Blackburn	Studebaker
Blair, Nebr.	Warrick Auto Co	Studebaker
Calvert, Tex.	Geo. T. Bergeron	Henderson
Columbus, Nebr.	Held Auto Co	Studebaker
Columbus, O.	Broad-Oak Automobile Co.	Paige-Detroit
Cuyahoga Falls, O.	Falls Auto & Sales Co	Henderson
Danville, Ill.	D. D. Snyder & Co	Henderson
Fargo, N. D.	The Bergan Auto Co	Henderson
Farragut, Ia.	Palm & Cutler	Apperson
Grand Rapids, Mich.	W. S. Farrant	Henderson
Green Bay, Wis.	Washington Garage	Mitchell
Green Bay, Wis.	Washington Garage	Little
Green Bay, Wis.	Washington Garage	Overland
Haines City, Fla.	Wynn W. Scott	Henderson
Hamilton, O.	Hamilton Motor Car Co	Buick
Henderson, Nebr.	David Goertzen	Studebaker
Herman, Nebr.	Olson Auto Co	Apperson
Ithaca, Nebr.	J. Knapp	Studebaker
Kokomo, Ind.	James H. Carnelly	Franklin
Lancaster, Pa.	Automobile & Supply Co	Henderson
Lima, O.	Griffith Auto Sales & Supply Co.	Henderson
Lordsburg, Cal.	Williams Bros.	Henderson
Miami, Fla.	Chas. L. Wetzel	Henderson
Milwaukee, Wis.	F. O. Morse	Crawford
Minneapolis, Minn.	MacArthur-Zollars-Thompson Co.	Richmond
Monroe City, Mo.	Monroe City Auto Co	Henderson
Montgomery, Ala.	Henry L. Hattemer	Henderson
North Platte, Nebr.	J. S. Davis Auto Co	Franklin
New Orleans, La.	Myatt-Dick Motor Car Co	Franklin
Oakland, Nebr.	Chas. E. Anderson	Studebaker
Malvern, Ia.	Robbins Auto Co.	Firestone-Columbus
Pacific Grove, Cal.	Herbert Nuttall	Henderson
Rock Rapids, Ia.	George H. Watson	Mitchell
St. Louis, Mo.	Bagnall Automobile Co	Cole
Salisbury, Md.	Frank J. Adams	Henderson
San Jose, Cal.	J. Ramsellus	Henderson
Saranac Lake, N. Y.	H. J. Morse	Henderson
Stockton, Cal.	S. F. Ruff	Henderson
Ventura, Cal.	Wesley B Parker	Henderson
Walnut, Ia.	Cole & Hanson	Apperson
Washington, D. C.	Matheson Motor Co	Premier
Washington, D. C.	Potomac Motor Car Co	Marmon
Waynesboro, Ga.	R. C. Neely & Co	Henderson
Wilkesbarre, Pa.	C. D. Hershberger	Henderson

TRUCKS

Towns—	Agent	Car
Albany, Ore.	Barrett Bros.	Federal
Anaheim, Cal.	P. J. Weisel & Co	Federal
Auburn, Cal.	H. W. Davis	Federal
Austin, Tex.	Ben M. Barker	Federal
Bakersfield, Cal.	Ben L. Brundage	Federal
Boston, Mass.	Charles D. Daly	Atlantic
Boston, Mass.	C. E. Whitten	Federal
Central Village, Conn.	U. LaFrance	Federal
Cincinnati, O.	Cincinnati Motor Car Co	Federal
Connellsville, Pa.	Connellsville Garage	Federal
Dallas, Tex.	Alamo Automobile Co	Federal
Denver, Colo.	W. W. Barnett	Federal
Detroit, Mich.	Thompson Auto Co	Federal
Evanston, Ill.	George C. Foster & Co	Federal
Eugene, Ore.	J. S. Airheart	Federal
Fall River, Mass.	Robt. W. Powers	Federal
Fitchburg, Pa.	Fitchburg Hardware Co	Federal
Ft. Wayne, Ind.	M. N. Plumadore	Federal
Fresno County.	The C. W. Hobson Co	Federal
Hamburg, N. Y.	D. W. Brodback	Federal
Hammond, Ind.	E. C. Minas & Co	Federal
Hartford, Conn.	R. D. & C. O. Britton Co	Federal
Hollywood, Cal.	J. E. Carroll	Federal
Houston, Tex.	Alamo Automobile Co	Federal
Imperial, Cal.	Edgar Bros.	Federal
Jamestown, N. Y.	Edwin Wells	Federal
Lawrence, Mass.	Smith Bros.	Federal
Long Beach, Cal.	McKenzie & Bellows	Federal
Los Banos, Cal.	C. W. Hobson Co	Federal
Minneapolis, Minn.	Pence Auto Co	Federal
Newark, N. J.	B. F. Adams & Co	Federal
New Haven, Conn.	Ailing Garage Co	Federal
New Orleans, La.	Fairchild Auto Co	Federal
Pasadena, Cal.	Munroe Motor Co	Federal
Pendleton, Ore.	M. K. Long	Federal
Petaluma, Cal.	Jos. Peoples	Federal
Pittsburgh, Pa.	Union Motor Car Co	Federal
Pomona, Cal.	Whip & Zander	Federal
Pueblo, Colo.	Ideal Motor Car Co	Federal
Reno, Nev.	J. R. Wainwright	Federal
Richmond, Va.	Oakland Auto Co	Federal
Rochester, N. Y.	J. Cunningham	Federal
Sacramento, Cal.	J. D. Lauppe	Federal
St. Charles, Ill.	C. S. McCornack	Federal
St. Paul, Minn.	Pence Auto Co	Federal
Salem, Ore.	W. J. Pruitt	Federal
Salt Lake City, Utah	Cheeseman Auto Co	Federal
San Antonio, Tex.	Alamo Automobile Co	Federal
San Diego, Cal.	Hunt Auto Co	Federal
Santa Ana, Cal.	T. W. Neely	Federal
Springfield, Mass.	W. H. Baxter	Federal
Stockton, Cal.	Sampson Iron Works	Federal
Syracuse, N. Y.	A. J. Jackson	Federal
Tacoma, Wash.	Pacific Car Co	Federal
Taunton, Mass.	Brownell & Burt	Federal
Tillamook, Ore.	A. H. Harris	Federal
Traverse City, Mich.	Traverse City Iron Works	Federal
Vancouver, B. C.	H. J. Tucker	Federal
Ventura, Cal.	R. O. Dennison	Federal
Victoria, Tex.	Texas Motor Car & Supply Co	Federal
Waco, Tex.	Percy Willis	Federal
Washington, D. C.	Louis Hartig	Federal
Watsonville, Cal.	H. G. Brewington Co	Federal
Whittier, Cal.	Saunders Bros.	Federal
Wilmington, Del.	Pennsylvania Avenue Garage	Federal
Winnipeg, Can.	Boyce Carriage Co	Lansden

HOUSTON, Tex.—The Essenkay Sales Co. has established a local office at 217 Carter building with H. H. Hassel manager.

Milwaukee, Wis.—The Auto Mart of Chicago has established a branch at Milwaukee, with headquarters at 301-303 Watkins building.

Lima, O.—J. J. Carson has purchased a lot in the center of the business district of Lima and will build a garage. The building will be of brick and concrete and will be 45 by 200 feet.

Boston, Mass.—Charles D. Daly, ex-fire commissioner of Boston, and former Harvard and West Point football coach, has gone into the motor industry, taking on the agency for the Atlantic truck. He has opened temporary offices in Postoffice square, but later on will get new salesrooms.

Montreal—Rosseau Brothers have incorporated themselves as a limited corporation. They are the Cadillac agents here.

Winnipeg, Can.—J. Mavor, lately distributing agent in western Canada for the Halladay, has given up this agency and opened a garage and repair shop in the western portion of the city.

San Antonio, Tex.—The Mathiesen Spring Cushion Wheel Co., which was recently organized with a capital stock of $60,000 will install a plant here for the manufacture of spring cushion wheels. The officers of the company are: C. W. Duhler, president; H. Matchiesen, vice-president, and H. A. Merucheau, secretary and treasurer.

Milwaukee, Wis.—F. O. Morse has established a salesroom, garage and repair shop at 386 Brady street and will be distributor for the Crawford.

Portland, Ore.—Having given up the agency for the Pathfinder and Paige cars, E. E. Gerlinger hereafter will devote his attention exclusively to the Warren and Stoddard-Dayton in Portland.

Los Angeles, Cal.—R. H. Morris, southern California manager of the Pioneer Automobile Co., Los Angeles representative of the Flanders electric, is now established in his new garage at 1236 South

Olive street. The Pioneer company now has sales houses in Sacramento, Oakland and Fresno.

Los Angeles, Cal.—H. G. Salisbury, for the past few months sales manager for the Pathfinder Motor Car Co. of Los Angeles, has been appointed general manager of the concern.

Milwaukee, Wis.—A $20,000 garage is being erected at North avenue and Thirty-second street, for Mohr Brothers, and will be ready for occupancy about January 1. The building is of reinforced concrete construction, 60 by 102 feet in size and two stories high.

Minneapolis, Minn.—The Frederick E. Murphy Automobile Co. has begun erection of a $140,000 structure for the Murphy line at Thirteenth street and Hennepin avenue, four stories, 137 by 144 feet. It will have one of the largest show rooms in the west.

Seattle, Wash.—W. C. Garbe, who assumed the management of the Seattle branch of the Studebaker Corporation last January, has resigned his post in favor of William J. Dunbar, of Portland, who has been with the Buick agency in the Rose City for several years.

Denver, Colo.—Three more car manufacturing concerns have just recently established state agencies in Denver. The Palmer & Singer Mfg. Co.'s line will be handled by W. W. Barnett. The Hall Automobile Co., which has just been organized by C. R. Hall, formerly of Chicago, will act as Colorado distributors for the Stutz cars. The Little Motor Car Co., of Flint, Mich., will be represented by the William Thorney Automobile Co.

Detroit, Mich.—Another building is to be constructed as an addition to their plant by the Long Mfg. Co., manufacturer of radiators. The size of the new structure has not been fully determined upon, but it is designed by this addition to secure sufficient space to enable the company to keep pace with a rapidly increasing business.

Los Angeles, Cal.—The Consolidated Garage Co., with a capitalization of $1,000,000, has been incorporated in Los Angeles and the following garages, the P. E., the Wall street, and the three-story C. C. & C. building on Los Angeles street, representing a valuation of $200,000, have come under the control of this new corporation, which also holds an option on the White garage on South Olive. The daily capacity of this group of garages is 1,500 cars. Buildings will later be constructed capable of housing twice this number of cars, and with this number off the streets the retail zone will be less congested. This new incorporation has been organized by F. C. Fenner and Elton Isbell, of Los Angeles, and A. C. Guild, of San Diego. It is the further purpose of the Consolidated Garage Co. to control a string of garages along the coast from Mexico to Canada, by which consolidation the motorist who tours much will, if he is a responsible owner, be able to get a letter of credit that will give him anything he wants in supplies or work at any of the affiliated garages; and the purchasing power of the corporation will result in furnishing cheapened supplies to its patrons.

Cleburne, Tex.—The Cleburne Motor Car Mfg. Co. has been organized here with a capital stock of $10,000. The incorporators are H. E. Luck, G. A. McClung, O. L. Bishop and others.

Columbus, O.—The White Motor Car Co., of Cleveland, has appointed C. E. Williams, formerly connected with the Columbus agency for the Speedwell line, manager of the Columbus branch of the White company.

Milwaukee, Wis.—A. Weisskopf, state agent for the O'Neil Tire Protector Co., and Oscar L. Bland have formed a partnership and established a general accessory and supply store and depot at 252 Fifth street.

Toledo, O.—Ernest Coler, formerly technical writer of advertisements for the Willys-Overland Co., has taken charge of the advertising department, succeeding Roy J. Buell, who has taken a position with the sales department of the Ohio Electric Automobile Co.

Green Bay, Wis.—Frank Fosha and L. P. Larson have opened a new garage and salesroom at 205-207 Washington street, under the style of the Washington garage. The building was remodeled from a large livery stable owned and operated by Mr. Larson, who on July 1 decided to transform his business to cope with the new order of things. The firm will represent the Mitchell, Overland and Little cars.

Boston, Mass.—Pope-Hartford Co., of Boston, capital stock $100,000; incorporators, George L. Dodd, Charles W. Cousens, Fred H. Lucas.

Bucksport, Me.—Bucksport Motor Co., capital stock $6,000; incorporators, J. E. Witham, H. N. Churchill, H. E. Churchill.

Canal Dover, O.—S. Toomey Co., capital stock $60,000; to manufacture motor cars; incorporators, R. I. Toomey, S. J. Brister, Theodore Williams, M. C. Toomey, Oliver Toomey.

Chattanooga, Tenn.—National Auto Top Co., capital stock $15,000; George B. Crawford.

Chicago—Triangle Tire Co., capital stock $5,000; incorporators, Lawrence A. Cohen, Charles Aaron, Floyd M. Stahl.

Chicago—Commercial Motors Co., capital stock $3,000; incorporators, Farlin H. Ball, Agnes V. Lee, Golip A. Buresh.

Detroit, Mich.—Merralls Starter Co., capital stock $150,000; to manufacture gasoline engine starters, etc.; incorporators, William A. Merralls, Robert S. Neeley, Harlow B. Lowland.

Elyria, O.—Elyria Auto Sales Co., capital stock $10,000; incorporators, W. C. Bennett, F. S. Bates, Correll Smith, J. J. Dillon.

Goldsboro, N. C.—Blackburn Garage & Motor Supply Co.; capital stock, $25,000; incorporators, H. C. Smith, M. M. Allen, W. A. Blackburn.

Haverhill, Mass.—Rambler Motor Car Co., capital stock $10,000; incorporators, James P. Molloy, George A. Burnham, Charles S. Goodwin.

Hopkinsville, Ky.—Hopkins Cadillac Co., capital stock $10,000; general motor car and garage business; incorporators, R. E. Cooper, T. W. Blakey, Odie Davis, Richard Levall, E. G. Peterson.

Houston, Tex.—Cole Motor Car Co., capital stock $12,500; incorporators, J. J. Settegast, A. J. Binz, F. H. Buelow, David F. Burks.

Kansas City, Mo.—Shackelford Garage Co., capital stock $2,000; incorporators, Addison Shackelford, L. E. Shock, Paul Gee.

Lowell, Mass.—Automobile Transportation Co., capital stock $25,000; incorporators, Ralph P. Champney, George E. Hardy, George M. Faulkner.

Recent Incorporations

Manhattan, N. Y.—Never Skid Manufacturing Co., capital stock $50,000; to manufacture skidding devices; incorporators, Charles H. Stanton, George L. Lewis, Daniel E. Wing.

Morgantown, W. Va.—City Automobile Co., capital stock $4,800; to manufacture and sell motor car supplies and operate a garage; incorporators, J. Leonard Yates, B. S. Dearing, N. B. Yost, Margaret Smith, Cora B. Dearing.

Norfolk, Va.—Auto Lighting Corporation of America, capital stock $400,000; incorporators, A. D. Newcomb, Wailes Hank, W. J. Simpson.

New York—Motormeter Co., Inc., capital stock $5,000; to manufacture motor car devices; incorporators, George H. Townsend, Harrison H. Boyce, Frederick J. Moses.

New York—R. H. Conty & Co., Inc., capital stock $2,500; to manufacture and sell motors, parts, etc.; incorporators, R. Henry Conty, M. Conty, Emil Frankel.

New York—Wright's Garage, Inc., capital stock $2,000; incorporators, William R. Dickie, Earl D. Wright, Elizabeth D. Wright.

New York—Central Park Garage Co., Inc., capital stock $500; incorporators, William E. Young, George J. Johnstone, Charles A. Frueauff.

New York—Detroit Cadillac Motor Car Realty Co., capital stock $100,000; incorporators, Edwin B. Griffin, Charles T. Green, Henry Amerman.

New York—Imperial Garage Co., capital stock $25,000; incorporators, W. F. P. Lofland, W. I. N. Lofland.

New York—Kammer Automobile Co., Inc., capital stock $10,000; incorporators, Max A. Kammer, Frances Kammer, William Magsamen.

New York—Perfection Automobile Body Co., Inc., capital stock $15,000; to sell motor car bodies and appliances; incorporators, William H. Mendell, William H. Mendell, Jr., James V. Simpson.

New York—Grant Six Co., Inc., capital stock $15,000; incorporators, Clarence P. Hulst, William G. Miller, James B. Speyer.

New York—Automobile Information Pub. Co., Inc., capital stock $10,000; to print and publish motor car trade lists; incorporators, Albert F. Britton, Robert B. Johnston, Freeman C. Britton.

Rochester, N. Y.—Automobile Safety Fender Co., capital stock $100,000; to manufacture motor car appliances; incorporators, William A. Snyder, Jr., Abram DeWolf, Abram Bune.

Salt Lake City, Utah—Utah Automobile Livery and Taxicab Co., capital stock $50,000; incorporators, Ave Meeking, Jr., Frank J. Guston.

St. Louis, Mo.—Dallas Motordrome Co., capital stock, $2,000; incorporators, Leroy M. Edwards, E. L. Winterman, A. E. Koerner, A. M. Stracker, James S. Arthur.

St. Louis, Mo.—Heinrich Automobile Co., capital stock $2,500; incorporators, Val Heinrichs, Margarette Heinrichs, Casper Lyham.

St. Louis, Mo.—St. Louis Motor Transportation Co., capital stock $25,000; general repair work; incorporators, W. E. Bush, Frank Bush, Knox Tussig, William A. Thomas.

St. Louis, Mo.—St. Louis Motor Transportation Co., capital stock $25,000; to contract for motor truck handling; incorporators, William R. Bush, Frank Bush, Richard S. Locke.

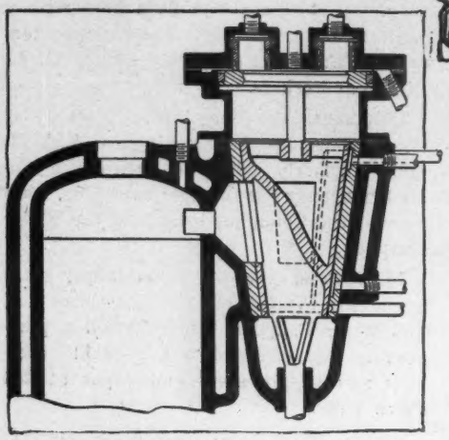
Utica, N. Y.—Otis Motor Sales Co., capital stock $10,000; incorporators, Edward J. Otis, William Cantwell, T. Harvey Ferris.

Walpole, Mass.—Walpole Tire and Rubber Co., capital stock $4,500; incorporators, Ernest W. Tinkham, Alvi T. Baldwin, James Dowdle.

Yoakum, Tex.—Automobile and Garage Co., capital stock $20,000.

Youngstown, O.—Youngstown Taxicab Co., capital stock $10,000; to operate and maintain a taxicab business and garage; incorporators, David Friedman, Sadie Friedman, Harris Friedman, Helen Friedman, Bert Friedman.

Current Motor Car Patents



COLLIER ROTARY VALVE MOTOR

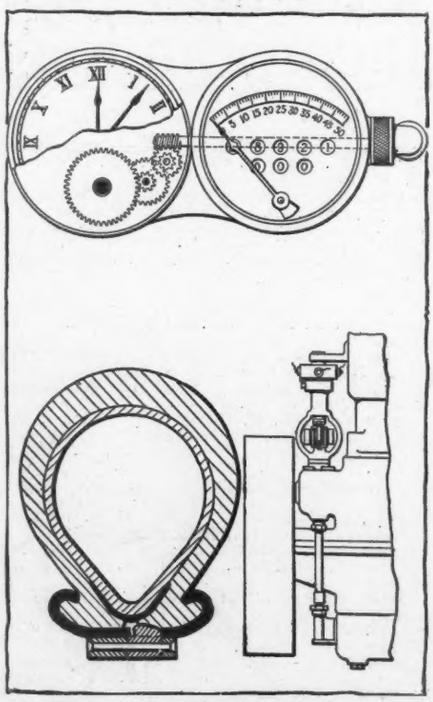
A ONE-VALVE Internal Combustion Motor—No. 1,040,277—To Guy B. Collier, Kinderhook, N. Y. Filed January 3, 1912, dated October 8, 1912. Referring specifically to a valve mechanism, this patent relates to a cone-shaped rotary valve, situated adjacent to a port opening in the side of the engine cylinder, and seated in a conical chamber with inlet and outlet connections at the bottom and top of the chamber, respectively. The hollow cone, which constitutes the operating element, is secured to a revolving valve rod, geared to the engine shaft, and is divided into substantially two halves, upper and lower, separate from each other, and communicating respectively with the exhaust and inlet manifolds, each provided with slots which register successively with the cylinder port at the proper moment in the engine cycle.

To render this valve gas-tight at all times, and yet to keep the pressure of the valve upon its seat constantly as light as is consistent with this object, regardless of wear, and independent of the expansion and contraction of the metal, it has been made conical in form, and normally seated in the valve chamber very lightly. Placed above it is a piston and cylinder, communicating directly with the engine cylinder. The piston is directly connected to the valve-stem, while the cylinder is secured to the valve chamber. The pressure in the valve cylinder is equal to that in the engine cylinder at all times, thus maintaining the valve pressure substantially the same, regulating this pressure in conformity with the actual needs of the valve. In addition to this advantage, the valve is cooled by water passages, and the indrawn charge, the latter being preheated, and the exhaust cooled by the same means.

Gasoline Filter—No. 1,040,283—To Emanuel L. Crum, Decatur, Ill. Filed January 30, 1911, dated October 8, 1912. This filter comprises a well, threaded to a head, provided with an inlet passage, exterior of a strainer nipple. To this nipple is secured a strainer screen, and above it, and separated from the inlet by the screen, is a discharge tube, leading out through the head of the device.

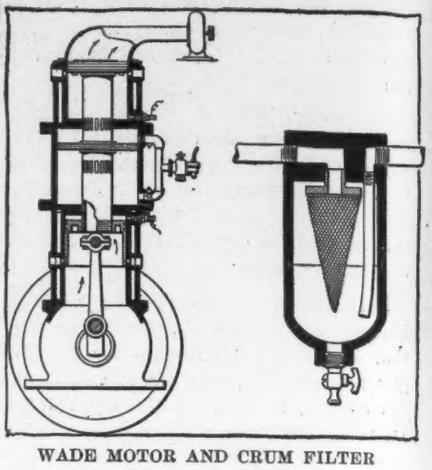
Double-Acting Internal Combustion Engine—No. 1,040,472—To Charles T. Wade, Annapolis, Md. Filed September 1, 1910, dated October 8, 1912. In a reciprocating gas-engine, the invention to which this patent refers consists of a cylinder, divided into three chambers provided with pistons, each of which is secured to a hollow piston rod. The function of the center chamber is that of the compression of the explosive charge primary to its introduction into the remaining two combustion chambers. Communication is established between the compression chamber and the combustion chambers through the hollow piston rod, which is provided with ports, communicating with the respective combustion chambers upon their reaching the ends of their working strokes. The scavenging means is not specified in the claims of this patent. A fan is used to create a draught of cooling air through the hollow piston-rod.

Automatic Spark Advance—No. 1,040,884—To Clyde C. Charles, Hoisington, Kan. Filed February 27, 1912, dated October 8, 1912. Of the centrifugal governor type, this automatic advance mechanism consists of a timer shaft, upon which the rotor of the timer is mounted, and upon which a revolving-weight governor is also disposed.



JONES CLOCK WINDING SPEEDOMETER COMBINATION. FISK RIM AND CHARLES AUTOMATIC SPARK-ADVANCE

The governor is linked to the timer in such a way as to automatically advance its timing at high speeds, and retard it at low speeds.



WADE MOTOR AND CRUM FILTER

Tobias Glare Screen—No. 1,040,814—To Francis H. Tobias, New York. Filed December 12, 1911, dated October 8, 1912. This device, described elsewhere in this issue, consists of a disk of fabric secured to a circular wire frame, which may or may not be provided with an aperture for the direct passage of light.

Fisk Demountable Rim—No. 1,040,275—To John Clarence Cole, Chicopee Falls, Mass., assignor to Fisk Rubber Co., Chicopee Falls, Mass. Filed December 27, 1910, dated October 8, 1912. This rim, adapted to clincher or other types of tires, consists of two portions, one provided with dovetail openings, and the other with projections of coresponding shape.

The dove-tailed projections are hinged, which permits them to be dropped, allowing the separation of the parts.

Jones Self-Winding Clock and Speedometer Combination—No. 1,040,344—To Joseph W. Jones, New York. Filed May 12, 1909, dated October 8, 1912. In a combination clock and speedometer, this patent relates to an extension shaft from the driving means within the speedometer, extending into the clock for the purpose of rewinding the spring thereof. This is accomplished by a worm drive from the shaft to a reduction gear-train. To prevent the winding of the gear too tightly, a slip connection is placed in the hub of one of the gears, comprising a fluted shaft within the hub, the flutings of which are engaged by a ball disposed in a pocket of the gear-hub, and pressed into the same by means of a spring. When the clock spring becomes sufficiently wound its resistance overcomes that of the ball retaining spring, and the ball is forced into the pocket, permitting the fluted shaft to turn independently of the gear.